660.5 v. 20 pt. 2

Effect of Modern Production Methods On Natural Gasoline Industry

By A. C. Rubel*

Read before California Natural Gasoline Association, March 14

MODERN production practice—greater use of the gas energy in the oil formation—is going to bring great changes to the natural gasoline industry, said Mr. Rubel in his address before the California Natural Gasoline Association.

It will affect its methods of plant operation, its methods of planning and designing plants.

"It means an enormous increase in casinghead gasoline production," says the author, "the economic effect of which I am not prepared to foretell, and a stability of production which will remove the speculative element from the industry and place it on an equal with refineries."

Introductory remarks on Mr. Rubel's address are omitted here.

I BELIEVE the essence of the present trend of thought in production technology lies in the realization that gas associated with oil in a reservoir represents energy and practically the only energy available for the recovery of its oil.

Efficient production of oil then means the efficient utilization of this energy, which, in turn, means the efficient control of the natural gas associated with the oil. It is on this premise that practically all of the recent production practices are built.

Dr. W. P. Haseman states the problem clearly when he says that the most efficient and economic utilization of natural gas in the production of petroleum will be attained when in production practice that control method is applied to the individual well which will result in:

First, the retention of the natural fluidity and energy in the reservoir fluids to the greatest extent possible consistent with scientific and economic conditions during the period of natural production of the field, lease or well.

Second, in the restoration of the depleted fluidity and energy in the reservoir fluids to the greatest extent possible—during the period of artificial production of a field, lease or well. (Plate 1.)

Let Plate 1 represent a cross section through a well in the average field and let us assume that it is the first well in the sand. The completion of such a well immediately creates an area of relatively low pressure in and immediately adjacent to the hole, which starts a movement of fluids in the direction of the lowered pressure. The rate of this movement is dependent on several factors, the most important being:

1. Pressure differential between the wall of this hole and surrounding reservoir.

2. Character and physical state of the moving fluid.

3. Physical condition of the reservoir as to porosity, sand thickness, etc.

Of these three major factors governing the fluid movement we know something of and have some measure of control over the first, a slight control over the second and none over the third. In each instance the only means of control must be exercised by the one device of regulating by some means the effective pressure at the wall of the hole opposite the productive sand.

Causing this movement is the expansive energy of the natural gas associated with the oil either in solution or in a free state and opposing the movement are the many factors which in the aggregate are expressed by the general term, frictional resistance.

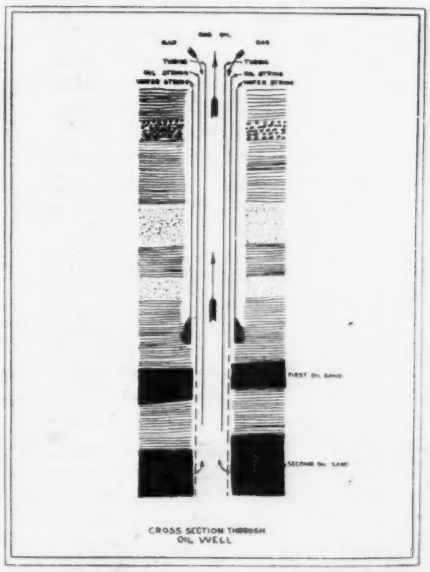

Plate 1—Cross section of a representative first well in the average oil field

Since it is the energy contained in gas which causes the flow into the hole, the rate and volume of such flow are dependent on its proper utilization.

In the Dominguez field, in California, for example, experiments indicate an original gas content in the reservoir of 344 cubic feet per barrel of oil. Under flowing conditions, however, 2400 cubic feet were produced with each barrel.

It follows then that, for every barrel so produced from this reservoir, approximately five barrels were robbed of their energy and left "dead" to be only partially recoverable by pumping or other methods. The ratio of recovery in this case would be as 344 is to 2400 or approximately 14.3 per cent of the sand content.

Proper methods of back pressure control by use of tubing, "beans," gas lift and well-regulated pumping are the most effective means available under normal conditions in controlling this ratio of gas to oil and in conserving and effectively utilizing the gas energy.

In Dominguez, for instance, the application of controlled back pressure, by means of gas-lift and regulated back pressure, decreased this gas production from 2400 to 1037 cubic feet per barrel or about 60 per cent.

On the basis of our original premise then, we should expect a corresponding increase in ultimate production in the proportion of from 344/2400 or 14/3 per cent recovery in the first instance to 344/1037 or 33 per cent recovery under controlled flow conditions.

These figures, of course, are not a true index to ultimate recovery and represent only the indicated recovery ratio at two particular periods of the life of the field. They do illustrate clearly the energy principle involved and demonstrate that gas energy properly conserved during any stage of production, will result in increased recovery, as well as increased current production, the latter in most cases being of the least actual importance.

The effect of such practice on the natural gas and gasoline industry is vitally important, although it is perhaps much more real than apparent.

During the periods of flush production in a field, where wells are per-

*Engineer Union Oil Co. of California.

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mitted to flow open and practically unrestricted, great gas peaks are reached which could not possibly be handled by gasoline plants and distributing facilities, resulting in the waste of billions of cubic feet of gas, millions of gallons of gasoline and thousands of foot-pounds of expulsive energy.

Back pressure control, by minimizing the gas to oil ratio, has in recent fields greatly decreased this waste and has done so with but slight reduction in the current oil output and a larger increase in ultimate production of both oil and gasoline. This to you, as casing-head manufacturers, means smaller and less sudden peak loads, longer plant life, slower decline and a greater degree of stability than ever possible before.

The satisfactory application of gas-lift is perhaps the greatest single advance to date in producing practice and its effect particularly on the gasoline industry has been great. The principles of gas-lift and its manner of application are probably well known to you all. It is simply a method of supplementing the natural gas energy contained in the oil as it enters the hole, to assist in lifting it to the surface.

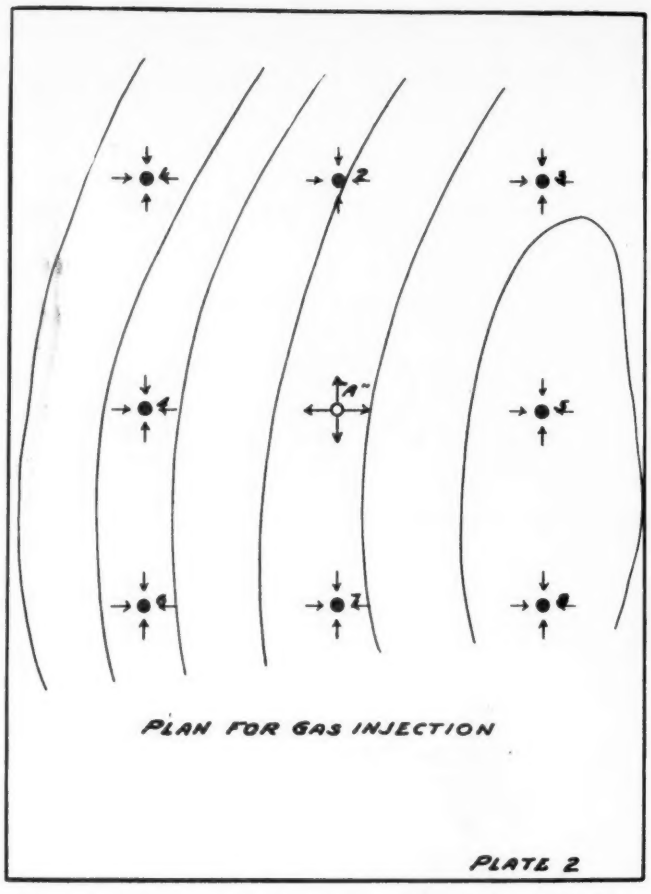

Plate 2—Portion of an oil field showing eight producing wells. Point "A" is where gas from the eight wells is compressed and injected back into the oil sands

There is a certain minimum volume of gas under any set of conditions which is required to lift a barrel of oil to the surface. If that volume is not available, the well will not flow and artificial means must be employed. Gas-lift is one of these means and the result of its application is to maintain a high gross gas production which approximates in volume the original gas under natural flowing conditions.

Plate 3 is a gas and gasoline production curve for two leases in the Dominguez field which are almost entirely operated by gas-lift. Up to the start of gas-lift the gas production followed a normal decline and the gasoline production in the absorption plant dropped accordingly.

Soon after the start of the gas-lift program the gross gas increased to practically the original volume it had produced under flow conditions and the gasoline production has remained constant in spite of the fact that the formation gas production has decreased almost 80 per cent. The effect on the absorption plant is to maintain a steady production within the capacity of the equipment. In addition, such a method admits of great flexibility in plant operation in the following manner:

Let it be assumed that the capacity of this plant is approximately 700,000 cubic feet per day, which was about the volume handled during the first five months of production. After this, the gas declined until, at the start of gas-lift, the plant was approximately 40 per cent under capacity. The circulated gas brought the input gas back to capacity and has held it there with a very slow decline since that time, the formation gas in the meantime declining to approximately 150,000 cubic feet.

Suppose new development should increase this formation gas to 700,000 cubic feet. The plant could still operate to capacity without overloading or loss of gasoline, by passing the excess gas around the plant and compressing it "wet" for recirculation, keeping just enough through the plant for efficient operation. In this manner a plant in conjunction with a gas-lift system may handle gas for about its absorption capacity without loss of gas or gasoline.

The next big step in production and the one occupying the center of attention among producers at the present time is the process of returning to the reservoir the gas produced with the oil for the purpose of maintaining the original conditions of reservoir pressure, fluidity and energy as long as possible, thereby increasing the ultimate production and lowering its cost. This is variously known as gas injection, repressuring, gas-drive, Marietta process, etc., and may have for its primary object one of three things:

1. Increase in current production with a corresponding increase in ultimate yield.
2. Arresting of decline with corresponding increase in ultimate.
3. Gas storage. This is accomplished by either an increase in current production, or an arresting of decline, depending on the manner in which wells are handled.

The general theory on which this process is based is the same conservation of gas energy which has been stated before, the difference being that the natural energy of the reservoir is not only conserved but additional energy is added to the reservoir itself by external means.

Plate No. 2 shows a portion of a field containing eight producing wells. Because each well is a point of lower pressure than the adjacent reservoir, there is a movement radially toward the wells, as indicated by the arrows, the rate of movement and the resistance to it depending on the factors of pressure, differential, fluidity and reservoir texture noted in the foregoing.

For purposes of discussion, we may assume a pressure differential increasing directly as some power of the distance from the well and more or less concentric to it, the point of maximum differential being at the greatest distance or, in this case, at the intersection of diagonals at point "A."

Under normal producing conditions there will eventually come a time, in spite of the best practice in the hole, when the resistance in the reservoir will be equal to the differential necessary for fluid movement, the forces will be in equilibrium which is the tendency of all natural systems, oil will no longer move to the hole and production will cease.

The field is then spoken of as depleted but it is actually depleted not of its oil but only of the energy necessary to produce that oil. You are, no doubt, familiar with the various estimates which place the ultimate recovery of a reservoir at from 15 per cent to 30 per cent of its oil content, 25 per cent being assumed as an average for California conditions.

For illustration, let it be assumed again that immediately on the completion of these wells (Plate 2) a well at a point "A" be drilled and the

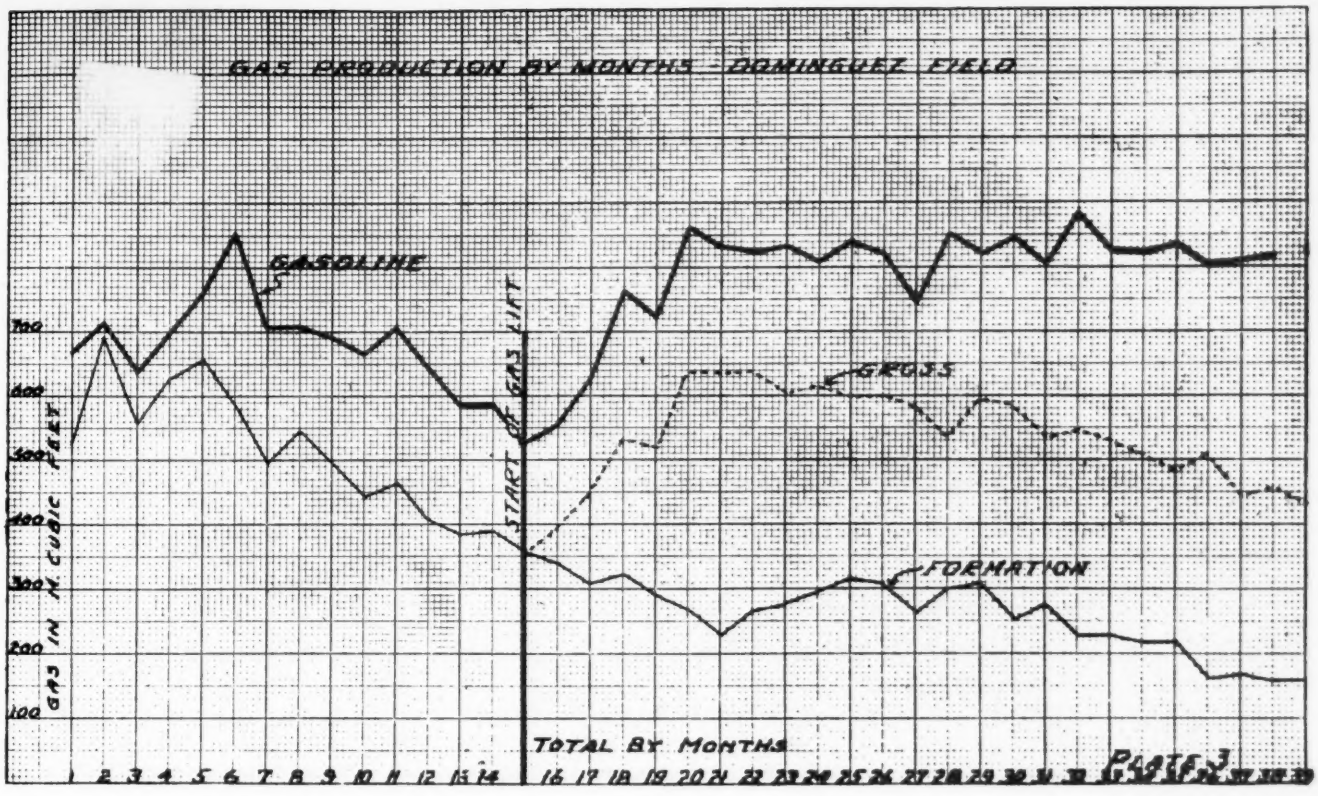

Plate 3—Gas and gasoline production curve for two leases in the Dominguez field in California, which are almost entirely gas-lift operated

gas from the surrounding eight wells compressed and injected through "A" into the same sands. The result obviously would be, if sufficient pressure were available, to maintain a constant pressure at "A" for an indefinite period, which would, in turn, allow a constant differential between that point and the wells.

Instead of a decreasing differential and a robbing of energy from the reservoir, as is the case in normal production practice, the energy is constantly replaced and a much greater ultimate production is certainly to be expected. A similar effect might be obtained by injecting gas at any stage of the field's development.

Operating and mechanical limitations prevent the widespread adoption of this principle, but it is being applied successfully in many parts of the country and in at least five fields in California.

As to the manner of application of the gas injection you are perhaps not vitally interested, but as to its results you, as gasoline manufacturers, certainly are.

To the producer this method means that where applicable gas, instead of being sold at six to ten cents a thousand cubic feet, may be injected and made to produce more oil and gasoline. Experience indicates, for example, in at least one California field that approximately 4000 cubic feet of gas will recover an additional barrel of oil and with it is approximately six gallons of gasoline which is worth, in the aggregate, at the present market price $1.48.

The cost of gas compression and handling of the gas is approximately five cents per thousand cubic feet, leaving a net profit of $1.28 or $0.32 per thousand cubic feet and the gas is still available for other cycles. Under such conditions of operation it is obvious that it is not good business to dispose of, at ten cents per thousand cubic feet, a product which may be made to produce at least 32 cents and no gas should be sold from such a field.

To the producer it also means a controlled production to be drawn on heavily, or held back as markets dictate, without fear of loss.

To the gas company it means that, wherever such operation is possible, little gas will be available for sale and, in fact, surplus gas from fields not adaptable to the process may be transported and used in fields which are adaptable.

It also means that, in periods of peak gas production and low consumption, such as is anticipated during the coming summer the surplus gas may be stored in suitable reservoirs to be drawn on at such future time and in amounts as may be required.

Such a system is in operation at present on a scale of about 8 million cubic feet per day in two of the Los Angeles Basin fields and it is planned to increase this figure to 30 million feet within the next 60 days, to handle the expected surplus from Signal Hill and Ventura.

To the natural gasoline industry it means a constant supply of gas under fairly uniform conditions for a great portion of the life of a field. Instead of a three to five year write-off period, necessitating a limitation on investment often to the detriment of operation, plants may be constructed with a degree of permanence which will permit of maximum operating efficiency. It means an enormous increase in casinghead gasoline production, the economic effect of which I am not prepared to foretell and a stability of production which will remove the speculative element from the industry and place it on an equal with refineries.

Texas Passes 700,000 Bbl. Daily Production

(By Telegraph)

HOUSTON, April 3.—Daily average production in Texas last week passed the 700,000-barrel mark for the first time in history. The total for all districts was 709,000 barrels. Hendricks field of Winkler county averaged 197,000 barrels daily throughout the week as compared with its one day high mark to date of roundly 203,000 barrels. Texas leads Oklahoma by approximately 70,000 barrels daily and California by about 85,000 barrels daily largely because of inability so far to control the Winkler situation.

Expressions on "Profits" Endorsed by Trade

FAVORABLE comment is being made by oil men the country over on the editorial thought run on the front covers of NATIONAL PETROLEUM NEWS, which started with the issue of March 7.

The thought emphasized is—it is within the power of every oil man to so regulate his production, refinery output, or marketing efforts as to keep within normal requirements of his normal market. If each oil man does that there will be no over-supply and a reasonable price can be had.

Thomas J. Hilliard, president of the Waverly Oil Works Co., Pittsburgh writes:

"I cannot resist writing to you to commend you for your message on the front cover of the NATIONAL PETROLEUM NEWS of March 7.

"If we keep talking enough, we may be able to make some impression on refinery executives who do nothing but jam as much crude through their refinery as the stills will handle.

"For several years now, I have tried to run our plants to sufficient capacity to take care of our legitimate trade, that is, business in our logical marketing territory.

"The distributing problem is also based on profits and not on the amount of gallonage which any one refiner is able to develop."

Fayette B. Dow, counsel, National Petroleum Association and Western Petroleum Refiners' Association. Washington, writes:

"The cover page on the NATIONAL PETROLEUM NEWS for March 7 contains one of the soundest statements in brief form I have read on the oil situation in many a day. I wish it might be repeated on your covers for several more issues."

C. M. Higgins, vice president, Standard Oil Co. of New York, New York, writes:

"I haven't had an opportunity to review your issue of March 7, but my notice is attracted to the reading on the front page. You are absolutely correct in this observation."

Carl O. Beroth, president, Acme Petroleum Co., Chicago writes:

"One of the most constructive things I have seen for some time is the front page of the March 7 issue of the NATIONAL PETROLEUM NEWS.

"If the executives of the large companies would realize that they will never better conditions by turning out more gasoline at cheap prices, it would be a wonderful thing for the industry. It seems that education along this line would be productive of better conditions. If refiners would only cut their runs and quit worrying about crude oil connections, we would get somewhere."

G. P. Brockway, president of the Seneca Oil Works, Warren, Pa., writes:

"Your remarks on the cover of your issue of March 21 I think hit the nail completely on the head. I have not seen anything that so fully covered the situation and rejoice with you in having thought you have written as you have."

E. M. Lyons, president of the National Petroleum Assoc., writes the following:—

"For the last several weeks, I have been reading the pointed paragraphs which you have had placed on the front cover of the NATIONAL PETROLEUM NEWS, and I want to congratulate you for the excellent thoughts you have given the oil men in these short paragraphs.

"They are right to the point, and contain plenty of food for thought."

Reeser Heads Committee To Hold Down Drilling

(By Telegraph)

TULSA, April 2.—President J. C. Denton of the Oklahoma-Kansas division Mid-Continent Oil & Gas Association today announced the appointment of a committee of five to develop plans for association activity in urging limitation of drilling.

The committee consists of E. B. Reeser, president of the Barnsdall Corp.; Dana H. Kelsey, general manager Prairie Oil & Gas Co.; John M. Lovejoy, vice president Amerada Petroleum Corp.; E. H. Moore, president Independent Oil & Gas Co., and J. T. King, president Kingwood Oil Co., Okmulgee.

Mr. Reeser is chairman. The appointment is in response to a resolution passed at a recent meeting of the association when it was decided that the scope of restrictive activity should be extended beyond the Seminole district. The committee will prepare suggestions for the consideration of the association.

Third Report of Oil Board To be Issued Soon

WASHINGTON, April 2.—No definite legislative program will be sponsored by the Federal Oil Conservation Board until after that body has received the views of the governors of the 20 oil producing states as to the necessity or feasibilty of uniform state legislation affecting the production of petroleum.

Dr. Work, secretary of the interior and chairman of the board, has made announcement to that effect by way of answer to suggestions that the board might decide to go ahead without waiting for the governors. The board asked for the views of the governors and it is going to wait for their answers. It asked the governors to consult the leaders in the state legislative bodies.

In the meantime the board, Dr. Work further says, will proceed with the publication of its third report, that on its world-wide survey of the oil situation. In addition to the two reports already made the board has caused the committee of nine representing the American Petroleum Association, the American Bar Association and the government to make a report on desirable legislation. That report is the foundation upon which Dr. Work based his request that the governors ascertain the views of state legislative leaders.

The third report covering national and international oil production, distribution, and consumption is nearly ready for publication.

Index to Coming Meetings

American Chemical Society, St. Louis, Mo., Apr. 16, 17, 18, 19.

Nebraska Independent Oil Men's Association, Hotel Kearney, Kearney, Neb., Apr. 18, 19.

Texas Independent Oil Men's Association, San Antonio, Apr. 18, 19.

National Petroleum Association, Cambridge Springs, Pa., April 19, 20.

Kansas Oil Men's Association, Hotel Lassen, Wichita, Kan., April 26, 27.

Natural Gasoline Department of American Gas Association, Texas Fair Grounds, Dallas, May 7, 8, 9, 10.

National Oil Scouts of America, Amarillo, Tex., May 21, 22.

Natural Gasoline Association of America, Hotel Mayo, Tulsa, May 22, 23, 24.

West Virginia Oil Marketers Association, Kanawha Hotel, Charleston, W. Va., June 14, 15.

"Whether It's Hats or Gasoline People Like Quality"

says Mrs. Young, who operates stations at a profit in "cut price" localities in Ohio

By N. M. Mainpa
N. P. N. STAFF WRITER

No, this is not an ad from "Vogue". This is a "failure" in the oil business. That's what Mrs. Mercedes W. Young, head of Aero Gasoline, Inc., Erie, Pa., calls herself, although she has sold enough gasoline profitably to wear this fox-trimmed caracul coat with harmonizing accessories

"I SHOULD not be running a gasoline business—I'm a failure as a business woman!"

No sooner had I put my head inside the door of the Aero Gasoline Inc., Erie, Pa., than this, like a weapon to ward me off, was hurled in my direction from a calm-looking mahogany desk. Mahogany desks always look calm.

"Well, of course, I—we—we are looking for a story about a successful oil jobbing company here and about a successful executive who runs it."

"Don't look at me, then. Because I'm a failure not only in the oil business but I'm a failure in business altogether!" And that was said with Ethelbarrymorean finality—that was all, there was nothing more.

I sat down, unbelieving. For once, some one would like to read a story about a failure, perhaps.

I discovered in time that the "failure" who is a woman, is doing a gasoline business running into millions of gallons yearly. This was developed from the feeble beginning of seven gallons the first day. Three-fourths of the original customers, who were secured when the first drive for business was made, have been retained. A profit has been made from year to year, even though price cutters have flooded the town where the company's headquarters are, and many of its stations.

When Mrs. Mercedes W. Young put up her first "Buy Gas Here" sign, she sold a total of seven gallons of gasoline in one whole day. That was some 10 years ago. Today, her company, the Aero Gasoline, Inc., distributor here, sells several million gallons yearly from 29 service stations and nine bulk stations.

Mrs. Young is probably the only woman in the country who actively runs an oil producing, refining, jobbing and marketing company, single-handed. How she has succeeded in building up her business, how courage and determination made her stick to it once she was in it, and what ideas she has gathered on the conduct of such a business, she told me as we sat in her office.

"The first two years I was in the oil business, I thought I would surely die. I have been in many businesses, but I never worked so hard in my life. Not only was the infinite detail of the business confusing at first. With price cutters here and price cutters there, with free equipment givers everywhere, and every conceivable sort of stunt pulled off to get business, it was at best a hectic life.

"When I think that I could be at home, leading a quiet and beautiful existence, with nothing to do but go to bridge parties—but that's just what I don't want to do. I want to be here, where there is hustle and bustle and action.

"THE determination not to get licked once I was in the business, kept me hanging on. I have had to put that determination, plus lots of courage, to work many times. Not long ago, when a garage was being built here in town, I was determined that I would get that account. I knew there were others who would be just as eager, too. But I saw to it that I got there first. I sold the man my gasoline and walked out with the contract in my hand, to face such a battalion of oil company representatives as I never hope to see

again, lined up like hungry wolves waiting for the chance to get in!

"One incident in my earlier business career that gave me enough courage for whatever was to come later, was the time I called on Mr. F...., who is, as you know, the head of the famous steel company which bears his name.

"I was at the time in the importing and exporting business which had been left me by my husband, who died. The World war was on and my business, which was flung over the world, was at a standstill. I was leasing the first floor and part of the second in a Pittsburgh office building for my art objects, rare laces, china, antiques and other goods I handled. This building was one of the finest in Pittsburgh and the rental, naturally, was high.

"When I asked for a release from my lease, which had several more years to run, the steel man's agent refused to grant it. No one knew the outcome of the war, and in the meantime, I could not afford to keep on, with business almost impossible in foreign countries.

"So I went to see my lawyer. I could not believe it when he told me to go to see Mr. F.... himself! And he further warned me not to dare come back without those release papers, signed by Mr. F..... There was nothing to do but go.

"When I reached the luxurious outer offices of the steel man, and managed to get past several important office boys, I was confronted by an elegant looking secretary, who, I first thought, was surely Mr. F.... himself. I made known my name and nature of my business and was in due time ushered into the august presence of the Great Man.

"With a brave exterior hiding many a fear inside, I strode in. He listened in respectful silence while I told my story.

"Not only did I come back with the release papers but the Great Man, who has the reputation of being as hard-boiled as he is well known, put his own movers on the job to help move my things out of the building!"

"Whatever courage I had lacked up to that time, I had now. That's probably why I am still in the oil business, instead of leading that quiet, beautiful life without the wear, tear and depreciation that accompany such a career as this!

"After I gave up my importing and exporting trade, I had some $200,000 to invest and the opportunity to go into the oil business presented itself. My initial entry into this business was at Uniontown, Pa. where I now have a bulk station. I have another bulk station at Indiana, Pa., which is managed by five brothers.

"Most people believe that so many relatives could not work harmoniously together. But I never saw a whole flock work together the way the Fetterman boys do. They keep the station as clean as a hospital. They are well known in the community and cater to the farm trade.

"I have never cut prices and do not believe in it as business policy. In Erie, which has been a hotbed for price cutting and where even posted prices have been 4 cents below the rest of the state for the past two years, I have always held 'to the market'.

"I sell my customers on a quality basis. I constantly point out to them that I cannot sell the grade of gasoline I am now handling at prices below those posted at our stations. I could sell them an inferior grade, of course, if that is what they want.

"I have even brought out figures which we have compiled to prove to a customer that it pays to patronize our stations for gasoline and oil. I show them figures on the gain in mileage they can achieve with a quality product. If these figures prove to the customer that he can save even two miles with my gasoline during the year, he is generally satisfied.

"It is my belief that cutting prices cheapens the product and I believe most of the motoring public feels that way. It is the same as going to a high class shop to purchase an $18 hat, and going to some side street store to buy a $10 one. You know that your $18 hat is just right, it looks good and you are proud of it, largely because of the shop it

> *"IT IS my belief that cutting prices cheapens the product," Mrs. M. W. Young, head of Aero Gasoline, Inc., Erie, Pa. says, "and I believe most of the motoring public feels that way.*
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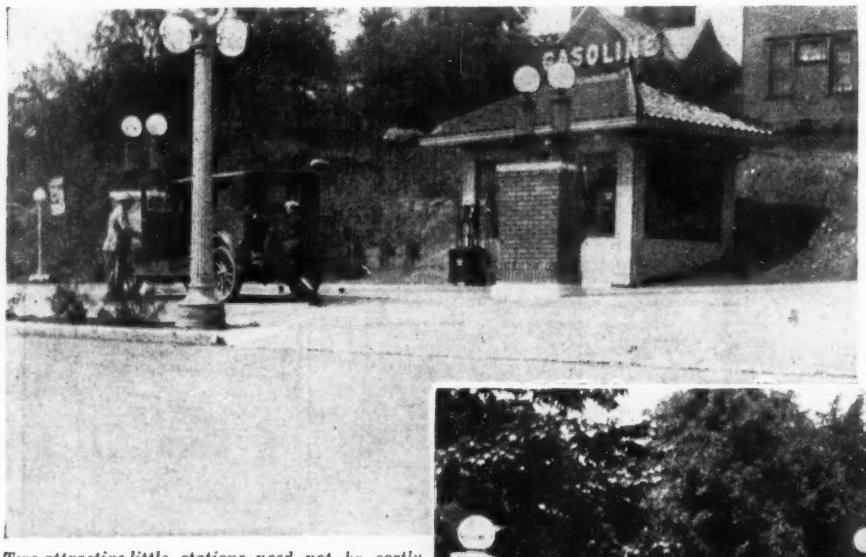
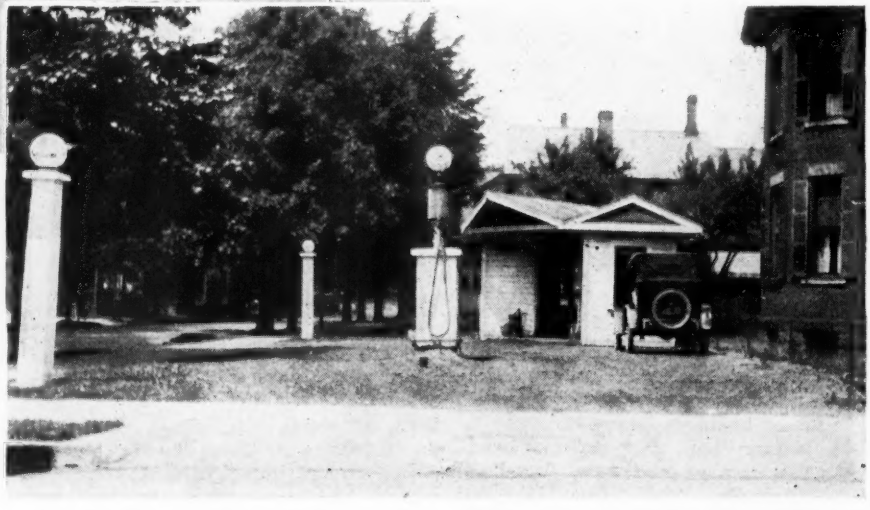
> *"But you wonder about the $10 one. You know it is not as good as the $18 one—the lines, material and workmanship, you think, must be noticeably cheaper."*





Two attractive little stations need not be costly to get the business as these stations of Aero Gasoline, Inc., Erie, Pa. indicate. They were designed by one who has had no engineering training, F. H. Holmes, vice president of the company, recently out of school

came from. But you wonder about the $10 one. You know it is not as good as the $18 one, the lines, material and workmanship, you think, must be noticeably cheaper.

"While price cutters abound over town here, and have their places of business on every side of me, I have lost but little gallonage and have made a fair profit.

"At first I lost a few wholesale accounts, but what good is it to sell 300 or 400 more gallons of gasoline a day, put on extra help perhaps, and take a loss of 1, 2 or 3 cents per gallon on those sales? I would rather lose the gallonage, and make a profit on what I do sell.

"And another thing. If I find a customer is kicking about the product he receives from my station, I immediately get to the root of the trouble. I never let any one go away from my stations feeling dissatisfied with the gasoline or oil I sell. He must feel I am just as careful about the product I put into his car as I am of what I put into mine.

"I CALL a meeting of our station men three times a year for the sole purpose of hearing and discussing the ideas and suggestions in station operation they gather from motorists.

"The men are asked to prepare papers which they read at these meetings.

"They know these meetings are coming so they keep notes in points on service, special equipment and so on, that motorists ask for.

"I ask them to prepare papers and read them because, when they get to their feet to talk extemporaneously in a meeting, they often forget perhaps the most important point they wanted to bring out.

"Many suggestions from these meetings have been incorporated into our operating policy."

"Not long ago a customer who had purchased a drum of oil from us came in in high rage to tell us what awful stuff we had sold him. He said his car would not go and that he had had this trouble since he put our oil into it. This being the first complaint of the kind I had had, I didn't know what was the matter.

"But I was so sure our oil was all right, that I told him I would bet him anything the trouble was with something else. I suggested that the thing to do was to take the car to the best engineer in town and have him examine it, to which the man finally agreed. Well, it was discovered water was leaking from the cylinder block into the motor oil. He went home satisfied and has been a satisfied customer ever since.

"One thing that I believe in is to have young employes do the actual work. The ideas of youth are young and inspiring. In this day when methods and ideas change so rapidly, young people are much more able to keep up with the procession than the older ones. While I would not fire old employes, I would not hire them, either.

"But business needs young ideas. I find that an ambitious, intelligent young man or woman thinks faster and usually more clearly than the older person. It takes the older ones to watch the financial end, which is what I am doing mostly today.

"My son, F. H. Holmes, is vice-president in charge of purchasing and sales, and I find him not only an able executive but one who constantly injects and develops new ideas and new methods into the business.

"Because I believe one cannot successfully run an up-to-date, live business from a swivel chair, I ask for opinions and ideas from my station men who come into contact with the motoring public daily. My own personal contact with customers is, of course, limited. So I ask the station men, pump attendants and truck drivers to keep in mind any comments customers make, any service or equipment they may ask for that we do not have.

"For the purpose of hearing these comments and opinions, I call a meeting of all station men and drivers three times a year. At these meetings they read papers they have prepared giving their ideas for the betterment of service to motorists.

"These are ideas they have gained from their daily work and contact with the public. I have been able to pick up much of benefit and value to our business in this way.

"Clean stations and attendants and attractive displays of merchandise, were the suggestions made at one of these meetings by several of the men as of prime importance. One attendant told of a motorist at a card party he attended, commenting on the cleanliness of some particular station in town, and mentioning in contrast another station and its attendants.

"Our men are thoroughly trained in greasing and oiling work, so that they can do this up to the locks on the door. A blue print showing how and where each make of car should be oiled and greased, is given to each man doing this work, which he can readily follow."

The company with its associated companies, has its own production in Forest and Warren counties, Pa. Service and bulk stations are at Uniontown, Indiana, New Kensington and Erie, Pa.; and at Ashtabula, Conneaut, Amboy and Jefferson, O.

Collins, Sales Manager Of Marland, Resigns

SAMUEL C. COLLINS
Vice president Marland Refining Co., in charge of sales who is resigning April 30

(By Telegraph)

TULSA, April 2.—Samuel C. Collins has resigned as vice president of the Marland Refining Co., effective April 30. Mr. Collins has been in charge of sales having supervision of both the retail marketing division and the tank car sales. He has been a director of the Western Petroleum Refiners Association for a number of years and is well known throughout the refining and marketing branches of the industry.

The Marland Refining Co., has not announced who will fill the vacancy and Mr. Collins has not announced his future plans.

Sinclair Still is Buying Salt Creek Royalty Oil

WASHINGTON, April 2.—An attempt is being made to bring into the Teapot Dome scandal the contract between the government and the Sinclair Crude Oil Purchasing Co. whereby the latter buys the government's royalty oil obtained from public land in the Salt Creek field.

A newspaper story asserts that notwithstanding Harry F. Sinclair's involvement in the Teapot Dome matter the government has renewed a contract, originally made in 1922, for another period of five years.

The contract was renewed Feb. 20, 1928, because the government could not help itself. It could have failed to carry out its part of the contract, but, according to the opinion of the law officer of the department of the interior it would have, ultimately, to pay the Sinclair company damages for a breach of the contract.

Commission Order Necessary to Gain Prorating of Winkler Crude

By Paul Wagner
N. P. N. STAFF WRITER

FORT WORTH, March 30

AN ORDER of the Railroad Commission of Texas, recommended by its advisory committee of oil executives, is the next step to result from failure to reach voluntary agreement on prorating of Winkler county crude.

When an order is issued, in the next few days, it will put into effect a partial prorating of production and market outlet. The plan recommended by the advisory committee is that the commission prorate the transportation outlet equally on the basis of 40-acre units, irrespective of ownership, with fractional tracts getting proportionate parts of the available runs.

Existing contracts of operators would be recognized and production above prorata percentages would be allowed to fill such contracts. In turn, owners of neighboring acreage would be allowed to produce a quantity of oil equal to that taken out by contract-holders, but they would have to store the difference between their own allotted outlet and the total so produced.

The advisory committee, in presenting its report to the railroad commission, said:

"YOUR committee deems it proper to state that while the plan suggested will not provide an entirely satisfactory method, inasmuch as it will not in our judgment accomplish proration of production in the strictest sense, its adoption will be a forward step toward a desired end; and, in order to initiate definite procedure, we recommend its adoption by you."

The advisory committee is composed of R. D. Parker, chief supervisor, oil and gas division of the commission, chairman; Underwood Nazro, second vice president, Gulf Production Co.; Ed A. Landreth, president, Landreth Production Corp.; Ed H. Moore, president, Independent Oil & Gas Co.; W. S. Farish, president, Humble Oil & Refining Co.; W. B. Hamilton, Independent operator and chairman of the oil and gas bureau of the west Texas Chamber of Commerce; and Tom E. Cranfill of Cranfill & Reynolds, Inc., Dallas.

If the recommended plan is put into effect as a railroad commission order it will remove incentive in many parts of the field for drilling more than one well to 40 acres. It would also prevent Hendricks field production reaching higher than present yield levels of about 200,000 barrels daily.

No storage would be permitted beyond that recognized in existing contracts and that made necessary by wells produced above their usually allowable fraction in competition with owners of wells fulfilling contracts, except that any operator might store his allowable fraction instead of marketing it.

EACH operating company in the field was called on by Clarence E. Gilmore, chairman of the railroad commission, to state its position with regard to submission of contracts for study and effort to gain agreement on prorating. All interested companies were represented except the American Petroleum Co., and the Republic Production Co., both subsidiaries of the American Republics Corp.

Four companies expressed through representatives their willingness to submit contracts to the commission itself, but did not want them made public either to the general public or the advisory "Committee of Seven."

Magnolia Petroleum Co., Southern Crude Oil Purchasing Co. of the Pan American group, Atlantic Oil Producing Co., and the Pure Oil Co. were in such stated positions.

W. H. (Bill) Francis, vice president and general counsel of the Magnolia, specifically mentioned presence on the advisory committee of Messrs. Farish and Nazro of highly competitive companies, whose right to examine Magnolia's private contracts he opposed. Mr. Nazro, after saying he did not seek place on the committee and never wanted it, offered to resign in favor of either Mr. Francis or Ben H. Stephens, vice president and general manager of the Magnolia.

A laugh followed Mr. Nazro's statement that neither Mr. Francis nor Mr. Stephens "trust me but I am willing to trust either of them."

Mr. Farish also made clear he was on the committee only because of the railroad commission's insistence and Chairman Gilmore remarked similarly.

While on his feet Mr. Farish took occasion to say he regarded proration in Texas as the sole keynote to prosperity in the petroleum industry of the nation this year.

Ed H. Moore of Independent Oil & Gas Co., after offering his place on the advisory committee, said:

"Unless there is a solution of this problem I think it will be disastrous and I want the responsibility assumed where it belongs."

After the opening session, at which the discussions mentioned took place, the advisory committee went into executive meeting with owners of contracts. They spent virtually the entire afternoon in unsuccessful effort to reach agreement, following which the advisory committee decided among its members to report recommendations for an order by the railroad commission.

REPRESENTATIVES of various interests present for the conferences were E. H. Blum, president, Atlantic Oil Producing Co., Dallas; R. W. Howe, vice president, Atlantic Pipeline Co., Dallas; E. G. Allen, Roxana Petroleum Corp., Dallas; U. D. B. Daly, Shell Pipeline Corp., and Roxana Petroleum Corp., St. Louis; Sheldon Hardin, president, Southern Crude Oil Purchasing Co., Shreveport; A. W. Peake, vice president Dixie Oil Co., Inc., Shreveport; R. A. Westbrook, Westbrook & Co., Fort Worth; Tom E. Cranfill, Cranfill & Reynolds, Inc., Dallas; Frank T. Pickrell, Texon Oil & Land Co., Big Lake; Clint Murchison, Murchison Oil Co.; Ben H. Stephens and W. H. Francis, Magnolia Petroleum Co., Dallas; J. D. Collett, Fort Worth; Ed A. Landreth, Landreth Production Co., Fort Worth; W. S. Farish, Humble Oil & Refining Co., Houston; W. G. Skelly and C. C. Herndon, Skelly Oil Co., Tulsa; Ed H. Moore, Independent Oil & Gas Co., Okmulgee; Underwood Nazro, Gulf Production Co., Houston; W. A. Moncrief, Marland Production Co., Fort Worth.

One of the big six wheel trucks used by the Standard Oil Co. of New Jersey in delivering Esso, special anti-knock fuel. On long hauls it is usually desirable to use both truck and trailer in order to get the maximum pay load

Bigger Profits for the Refiners in 1928

One Way They May be Realized is by Using Big Trucks to Haul Products From the Refinery

By Paul Truesdell, N. P. N. Staff Writer

Article 3

CLEVELAND, March 30

AN ERA of transportation by truck seems to lie just ahead of the refining industry.

As the past three or four years have been marked by large development in the transportation by water of crude oil and refined products, so the years immediately ahead will probably see enormous development in hauling refined products on rubber tires.

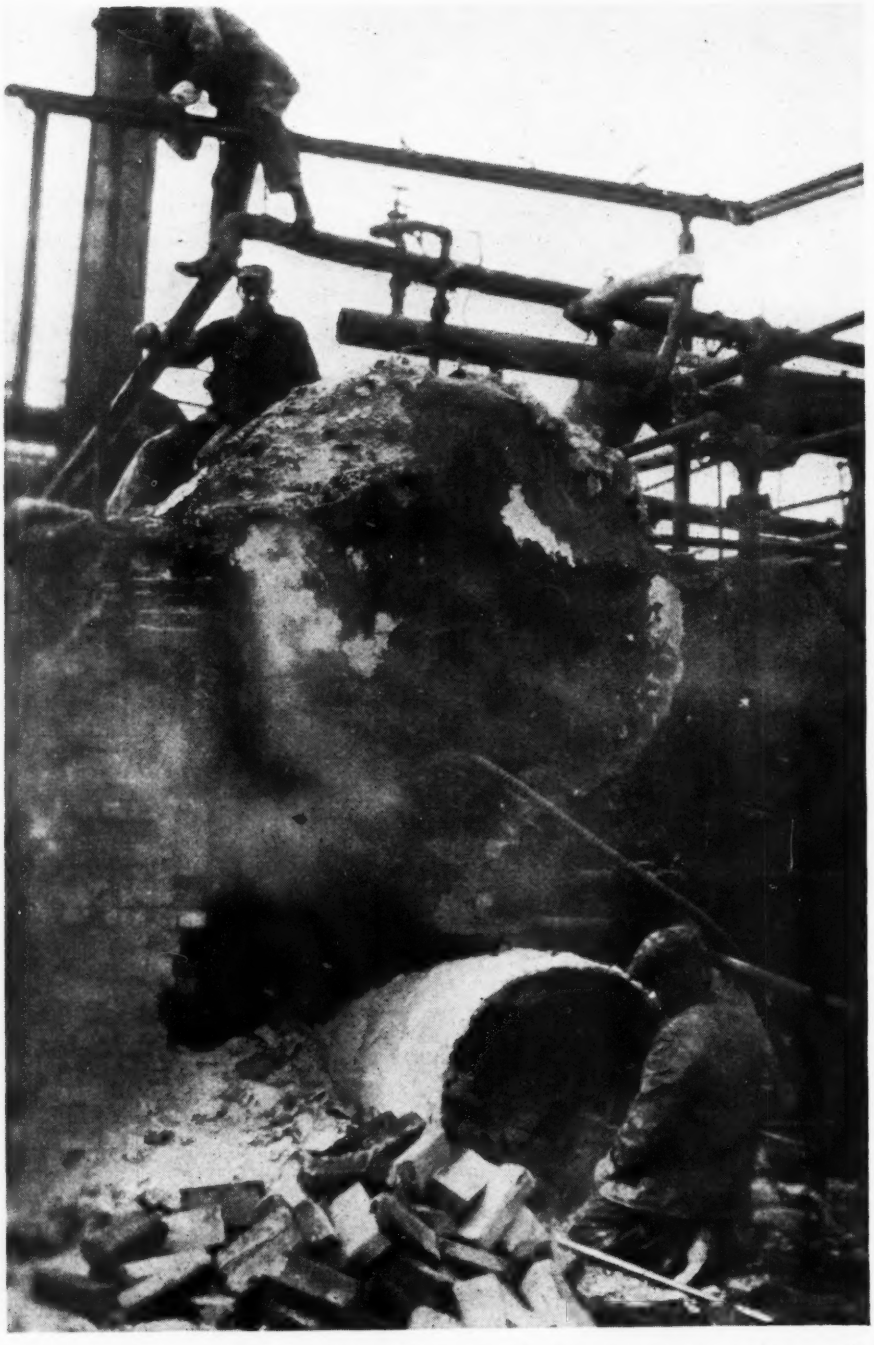
This is not to say that water transportation of oil is to decline and be supplanted by truck hauling. Far from it. Building of water terminals up and down the Atlantic coast and preparation of docks and storage facilities in the large cities on the Great Lakes belie that, as well as the steady building of tank steamers and oil barges.

Refiners need the help of every means that will help them to put into their pockets some of the cents per gallon that now go to the railroads and other transportation agencies. The truck seems to be one means of saving some of this money.

Of course, use of trucks is an old story in the oil business. Hundreds of thousands of tank trucks every day are hauling gasoline from bulk station to filling station the country over and carrying to the dooryard of the remotest farm the gasoline and oil for the farmer's truck, his car, his tractor and the kerosene for his lamps.

But it is a new kind of truck transportation that is coming. It may take the place of the tank car to a large extent for hauling refined products from the refinery to the bulk station for distances of 50, 75, 100 or even 200 miles.

Hauling gasoline and oil over the highways, as well as saving money



Old stuff must give place to modern equipment in refineries that expect to make a profit. Here is shown an old still being torn out to make way for a new battery. It is in the plant of the White Star Refining Co., Wood River, Ill.

on freight rates for the refiner would have an element of justice in it too for the highways are built largely from money raised by tax on gasoline which the oil companies, if they do not actually absorb it, go to considerable trouble and expense to collect and remit to the state.

A great deal of the consideration that is being given by many refining companies to the building of small plants on the pipe line in or near large centers of consumption of petroleum products is based on the possibility of distributing the products from such plants by truck.

In fact, in some cases small refineries so located could get by profitably because their haul by tank car would be shorter than that of their competitors in distant refining centers. In other cases the small plant in the consuming center would be unable to show a worthwhile profit unless truck transportation was used, because of the high short haul rates prevailing on the railroads in most localities.

Operation of trucks, especially big ones, is an expensive proposition and therefore, in order to make long distance truck hauling profitable, it will be necessary to carry a very big load. This will mean the use of units each comprising a truck and trailer each fitted with a large tank and capable of carrying together around 6000 to 6500 gallons, which is at least double what most of the large trucks carry today.

Not only will the advent of such trucks on the road spell an actual saving in freight rates to the refiner in many cases but they may have the secondary effect of causing reduction by the railroads on short hauls in territories where they want to keep the business.

In one case, this has already been proved out. The Standard Oil Co. of Indiana built a 2500-barrel refinery near Saginaw, Mich., to handle the crude from the small shallow field there. The local freight rates were high and it was proposed to haul the products from the refinery to nearby cities by truck.

Thereupon the railroad came forward and reduced its rates by about three-fourths, giving the Standard what amounted to a switching rate to nearby cities. So the trucking idea was abandoned, the railroads kept the business and the Standard of Indiana saved money.

As to the savings to be made through hauling by truck, the chief engineer of a big oil company, in collaboration with an accountant of the company's transportation department, figured out the cost of hauling by truck as shown in table on opposite page. The cost of the truck-trailer unit was figured at $10,000 which was probably somewhat low.

Or suppose the figures be based on an average haul of 100 miles. This would mean equal mileage but only one round trip a day, which would halve the gallonage carried to 2,160,000 gallons a year and thus double the cost of transportation per gallon to .0050 cents.

It is estimated by the traffic department of a big oil company that the average tank car haul the country over costs about three-quarters of a cent a gallon up to 75 miles, 1 to 1.1 cents a gallon for up to 100 miles and 1.1 to 1.5 cents for up to 200 miles. On this basis it is easy to see the possibilities for saving by truck hauling. The rate of course, varies considerably. In some territories it is somewhat less than the rate mentioned above and in many it is more.

Texas is one state where the rates are considerably more burdensome. In that state there is a minimum rate on refined oils of 15½ cents per 100 pounds or 1.02 cents per gallon for a 10-mile haul. For a haul over two railroads there is a minimum of 21 cents per 100 pounds or 1.39 cents per gallon. The rate graduates upward in five-mile jumps up to 120 miles above which a rate of 2.61 cents per gallon applies in what is known as common point territory.

A still higher rate applies when shipping into that part of the state known as differential territory. The maximum rate in differential territory may bring the freight to as high as 3.83 cents per gallon.

Cost of Long Distance Trucking

As Figured by Chief Engineer and an Accountant of a Big Oil Company

Depreciation, 24 per cent on $10,000	$ 2,400
Interest, 6 per cent on $10,000	600
Two drivers, $2,000 a year each	4,000
Gasoline, 72,000 miles at 2 cents a mile	1,440
Oil, 1500 quarts per year at 25 cents a gallon	375
Maintenance	2,000
Total cost	$10,815

Assume average haul 50 miles.
Assume average load 6,000 gallons.
Assume two round trips (200 miles) per day, or 720 per year (360 days).
720 X 6,000 = 4,320,000 gallon round trips.

$$\text{Cost per gallon for transportation} = \frac{10,815.00}{4,320,000} = .0025 \text{ cents.}$$

Everybody knows that to build a modern refinery, even a small one, costs a lot of money. In fact, the construction of a small refinery is out of all proportion to the cost of building a larger one. Also it is true that the overhead of a small refinery is higher than that of a large one due to the smaller amount of products over which to spread the cost of manufacture. But it would seem that the savings possible to make in freight bills might easily carry the higher overhead and leave something over besides for the refiner to stick in his pocket.

Suppose a little refinery is built on the pipe line with skimming equipment able to handle 5000 barrels a day of crude oil. Such a plant might reasonably be expected to cost somewhere between $200,000 and $300,000. Suppose this refinery realized from the 5000 barrels of crude run, 30 per cent or 1500 barrels of gasoline. That would be equal (42 gallons to the barrel) to 63,000 gallons of gasoline.

Suppose that, by trucking instead of shipping in tank cars, half a cent a gallon on that gasoline could be saved. That would be $315 a day, or $124,975 a year. And it must be considered that 30 per cent is a small yield of gasoline and a half-cent a gallon is a very conservative estimate of the freight rate saving that could be made in the majority of cases.

Considerable attention has been given to long distance hauling in large capacity trucks by the oil companies of California. The idea was originally promoted by an outside trucking company in Los Angeles. This company sold its trucking service to many refiners on the basis of so much a gallon. The oil companies found that they saved money by this means up to 200-mile hauls and the trucking company made a profit as well. NATIONAL PETROLEUM NEWS published a story on the operations of this Los Angeles trucking company on page 51 of the May 26, 1926 issue.

From the experience of the company in California it seems that 6000 gallons is about the minimum load that makes profitable operation on long hauls possible. In order to carry this load, it is necessary to use truck and trailer units. Ordinary heavy duty trucks and trailers will not carry such loads nor will the average pavements sustain them.

However, according to the experience in California it is perfectly practical to carry loads up to 6200 gallons on a truck and trailer unit, each of which has six wheels. Six wheels to a vehicle, when the rear four wheels are mounted on rocker shafts so the wheels can follow the irregularities of the road, prevent undue damage to pavements with any kind of reasonable load, it was found.

It is probable that one reason why the use of large capacity trucks for hauling oil has not become more general is the fear of state highway departments that their pavements would be destroyed by such loads. A great many states in their highway regulations prescribe maximum loads that would make impossible the use of the kind of trucks mentioned for hauling petroleum products.

However, the highway department of the United States, has made a thorough study of pavements and the effect of heavy loads on them. It is understood that this study has shown that loads carried on six-wheel vehicles when the proper width of tires are used, are permissible and that in fact they do less damage to any sort of pavement than much lighter loads carried on four-wheel vehicles.

The findings of the United States highway department together with the laws of the various states on the subject of highway load restrictions will be discussed next week.

WASHINGTON, April 2.—The Panama canal has asked for bids, to be opened April 9, at 10 a. m., for furnishing 450,000 gallons of motor gasoline and 250,000 gallons of kerosene, for delivery at the canal between May 15 and May 20. Bid forms may be obtained from the general purchasing officer, Panama Canal, Washington, D. C. by referring to schedule 1867.

Gasoline Stocks Fall 22% In Year Ended Feb. 29

CLEVELAND, March 31.—Gasoline stocks Feb. 29, Bureau of Mines figures show, were 10,932,000 barrels or 22 per cent less than stocks Feb. 28, 1927. Stocks Feb. 29 were 38,782,000 barrels. Gasoline output averaged 923,000 barrels daily in February 899,000 barrels daily in January. Stocks increased 2,670,000 barrels in February.

Foreign and domestic demand for gasoline in February averaged 844,000 barrels daily, compared with 795,000 barrels daily in January. In February, 1927, foreign and domestic demand for gasoline averaged 778,000 barrels. Demand in February 1028 was 7 per cent more than in the previous February. Domestic demand of 729,000 barrels daily was 12 per cent more than in the previous February.

Stocks of gasoline on hand Feb. 29 were 46 days' supply at the February rate of demand, compared with 45 days' supply at the end of January and 64 days' supply at the end of February, 1927.

Crude oil production averaged 2,332,800 barrels daily in February, a decrease of only 100 barrels from January average. Stocks of crude east of California rose 4,000,000 barrels to 362,963,000 barrels. California stocks rose 87,000 barrels to 114,907,000 barrels.

Kerosene production averaged 165,000 barrels daily, compared with 163,000 barrels in January. Stocks rose 22,000 barrels to 7,692,000 barrels.

Gas and fuel oil output averaged 1,068,700 barrels daily, gain of 27,700 barrels average over January output. Stocks east of California decreased 142,000 barrels to 123,808,000 barrels.

Lube output averaged 94,000 barrels daily, gain of 8,000 barrels daily over January production. Stocks increased 354,000 barrels to 8,332,000 barrels.

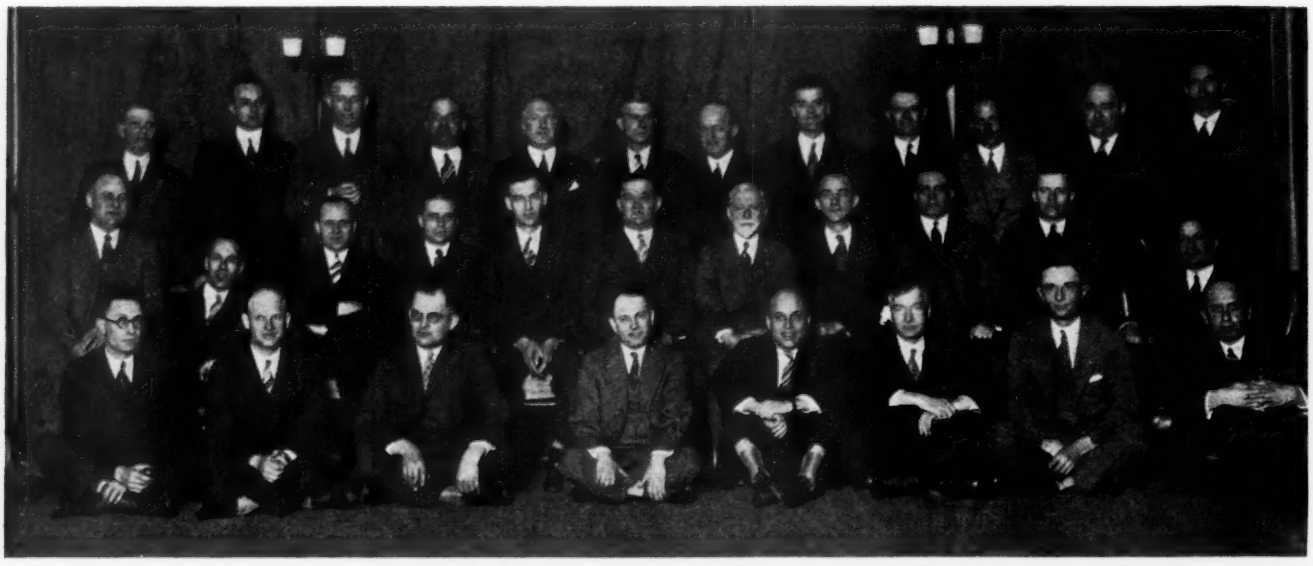
H. M. Blackmer Resigns From Midwest Board

DENVER, March 31.—H. M. Blackmer, former chairman of the board of the Midwest Refining Co. and fugitive witness in the Teapot Dome and the Continental Trading Co. case, has resigned from the board of the Midwest, T. A. Dines, present chairman of the Midwest, announced.

His son, Myron K. Blackmer, recently resigned as treasurer of this important subsidiary of the Standard Oil Co. of Indiana.

Mr. Dines would not comment on reports from Washington that John D. Rockefeller, Jr., had forced the resignations of the Blackmers.

Committee D-2 Will Put Out Treatise Explaining Tests of Oil



Committee D-2, American Society for Testing Materials, taken during the committee's spring meeting in Cleveland, March 25-26. Back row, reading from left to right: T. G. Delbridge, Atlantic Refining Co.; K. G. Mackenzie, The Texas Co.; R. P. Anderson, American Petroleum Institute; F. A. Hull, General Electric Co. (chairman); James T. B. Bowles, Crown Central Petroleum Corp.; J. B. Rather, Standard Oil Co. of New York; J. G. Detwiler, The Texas Co.; H. T. Kennedy, Bureau of Standards; T. A. Boyd, General Motors Research Corp.; R. C. Osterstrom, Pure Oil Co.; N. G. Gothard, Sinclair Refining Co.; V. N. Jenkins, The Texas Co.

Middle row, sitting: H. H. Hill, Bureau of Mines; W. C. Willharm, Westinghouse Electric Co.; Harold Farmer, Philadelphia Electric Co.; H. T. Bennett, Mid-Continent Petroleum Corp.; R. N. Jarman, Lindsay-McMillan Co.; D. W. Monroe, British-American Oil Co., Toronto; Florus R. Baxter, Vacuum Oil Co.; T. H. Rogers, Standard Oil Co. of Indiana; H. M. Wilhelm, Tagliabue Manufacturing Co.; E. W. Dean, Standard Oil Co. of New Jersey; R. R. Matthews, Roxana Petroleum Corp.

Front row: N. F. LeJeune, Tide Water Oil Co.; F. R. Lang, Roxana Petroleum Corp.; C. H. Fellows, Detroit Edison Co.; F. W. Breth, Sonneborn & Son; C. A. Neusbaum, Standard Oil Co. of New Jersey; A. E. Flowers, De Laval Co.; A. L. Foster, Bureau of Mines; Paul Truesdell, National Petroleum News. E. N. Hurlburt, Taylor Instrument Companies, a member of Committee D-2 was present at the Cleveland meeting but was absent when this picture was taken.

CLEVELAND, March 30

A PROGRESS report by the subcommittee on fuel oil, an announcement by the committee on turbine oils and general discussion of the forthcoming booklet, Application of Tests, were the high spots in the two-day meeting of Committee D-2 of the American Society for Testing Materials held in Cleveland March 26-27. The booklet on Application of Tests is being prepared by Committee D-2 and is expected to be ready for submission to the A.S.T.M. at the June meeting to be held in Atlantic City.

The fuel oil committee bears the official title of subcommittee 30 of Committee D-2. Harold Farmer of the Philadelphia Electric Co. is chairman. Mr. Farmer attacks the problem of fuel oil testing from the standpoint of a very large user. The consensus of opinion of this committee was that the selection of industrial fuel oil should be primarily based on viscosity rather than on gravity. It was recommended that the gravity specifications be entirely discarded and every effort made to educate users to buy on viscosity. It was pointed out that the atomizing quality of the oil depends entirely upon viscosity and not at all on gravity.

The committee is doing further work to develop a test that will give better results than the present extraction test of the amount of solids that will settle out from heavy fuel oils in storage, and will try to work out suitable tests for different grades of industrial fuel oils.

Subcommittee 11 on turbine oils of Committee D-2, through its chairman, J. T. B. Bowles, technologist of the Crown Central Petroleum Co., stated that considerable confusion is being caused in the industry through the fact that some testers are reporting results of the steam emulsion test in minutes instead of in seconds.

Mr. Bowles stated that the steam emulsion test which was made a standard of the society (D-157-23) last June, was developed by this subcommittee. The early work on the steam emulsion test was directed by T. G. Delbridge of the Atlantic Refining Co. in 1919. At that time it was known as the resistance to emulsion (R. E.) test and results were reported in minutes, the results being the length of time it took the emulsion to break and the water to settle out.

Some work was also done by W. E. Perdew, then chairman of the subcommittee on turbine oils.

In 1921 Mr. Bowles was made chairman of the emulsion committee with instructions to review all methods in vogue for determining the emulsion test of oils. Much work has been carried on by this committee with the cooperation of a number of large users of turbine oils, many of whom have included the present steam emulsion test in their specifications for turbine oils.

About two years ago the name of the subcommittee was changed from emulsion committee to committee on turbine oils.

This committee wishes to call attention to the fact, Mr. Bowles said, "that the old name of 'R. E. number' has been changed to 'S. E. number' (Steam Emulsion number) and that the readings of the results are made in seconds instead of in minutes as was done in the old R. E. test.

"For example, when reporting results under the old R. E. test an oil was stated to have an R. E. number of 1.5 or 2.5. Now, when using the steam emulsion test, the same oil would be reported as having an S. E. number of 90 seconds and 150 seconds respectively."

The treatise on application of tests will be the first attempt by an authoritative body to set forth for the benefit of the refiner, the marketer and the large user of petroleum products, just what the various tests are

that have been developed for determining the quality and suitability of oils for certain purposes, what the tests show and what they do not show.

The advance statement of Committee D-2 on the treatise follows:

"Physical tests are more widely used than chemical tests. This is natural, in view of the fact that the utility of petroleum products depends to a large extent upon their physical characteristics. Some of these physical tests are of little value except as they serve the refiner in controlling manufacturing processes, while others are useful both to consumer and to manufacturer as an index of the value or fitness of products for particular uses.

"The proper choice of tests and the assignment of proper numerical values to specifications based upon these tests is of fundamental importance. Failure to meet this requirement tends to increase the cost of the product to the consumer and adds to the burdens of the manufacturer.

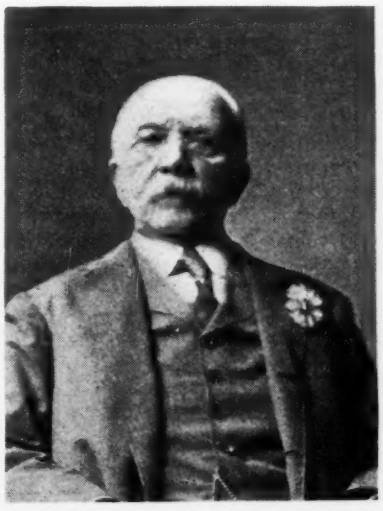
"The activity of Committee D-2 on Petroleum Products and Lubricants of the American Society for Testing Materials has resulted in the standardization of the more important of the older tests. This work has been of particular importance because the empirical nature of many of the tests renders it necessary to specify details of procedure which are essential to ensure uniformity of results. The committee has also developed many new tests and is continuing its work in this field.

"The purpose of this report is to meet the need for authoritative information regarding the applicability of the tests for petroleum products and lubricants now in common use in this country, and the significance of results obtained."

Among the tests to be covered in the treatise are: Color; cloud and pour; melting point; viscosity; volatility; flash and fire; distillation; vapor pressure; evaporation; water and sediment; emulsification; oxidation; dielectric strength test; carbon residue; acidity; neutralization number and saponification.

Two papers already have been accepted for presentation at the June meeting of Committee D-2 in connection with the annual meeting of the parent American Society for Testing Materials. One of these is on "Motor Fuel," by J. B. Hill of the Atlantic Refining Co. and the other on "Motor Oil" by R. E. Wilson of the Standard Oil Co. of Indiana.

Joseph Seep, Pioneer Standard Crude Buyer, Dies at 89



JOSEPH SEEP

One of the last of the Standard Oil group died at Titusville, Sunday. He was head of the Joseph Seep Purchasing Agency and chairman of the South Penn Oil Co.

TITUSVILLE, Pa., April 2.—Joseph Seep, one of the last of the old Standard Oil officials, died April 1 at his home here. He would have been 90 years old May 7.

Mr. Seep was the crude oil purchaser for the Standard Oil Co. in Pennsylvania and was held in high regard by Independent producers during the days of antagonism between them and the Standard.

Mr. Seep was head of the Joseph Seep Purchasing Agency, chairman of the board of the South Penn Oil Co., chairman of the Oil City Trust Co., director of the Seaboard National Bank of New York and the Commercial Bank of Titusville. He organized the Kentucky Natural Gas Co. and owned the Mine & Smelters Supply Co., Denver. He was interested in the Modern Tool Co., Erie, and some Titusville industries.

Mr. Seep joined Standard Oil in 1871 when Bostwick & Tilford, for which he was working, was purchased by Standard. Mr. Seep was born in Germany, coming to this country when 11 years old. In his youth he worked around Cincinnati and later for J. A. Bostwick in the hemp business. He moved to Titusville in 1869 and had made his home here with offices at Oil City.

Mr. Seep is survived by seven children, Herbert B. of Erie; E. E. and A. F. of Oil City; Albert H. of Denver; Mrs J. J. Harvey, Mrs. J. E. Fleming, and Mrs. Lillian Quinby, all of Titusville. Mrs. Seep passed away 11 years ago. Four children also have died. Funeral services will be Wednesday at Titusville and interment in the Seep mausoleum here. He had only been ill since the first of the year, his last appearance at his office Jan. 10.

Permanent Organization Of Supply Men Planned

TULSA, April 2.—Manufacturers of supplies for the natural gasoline industry may perfect an organization within the next few weeks to be known as the Natural Gasoline Supply Men's Association. The proposed organization would be an auxiliary of the Natural Gasoline Association of America.

A year ago the supply men provided a smoker and entertainment and several Dutch lunches for the gasoline men at their annual convention on a co-operative basis. The idea was to avoid duplications in entertainment and a spirit of rivalry in that respect.

The supply men appointed a committee composed of J. H. Satterwhite of Westcott & Greis, Inc., Bill Cummings of the Gas Engineering Construction Co. and M. F. Waters of the Smith Separator Co. to perfect the organization before the next gasoline convention to be held in Tulsa beginning on May 22.

Service Station Owners To Hold Convention

CHICAGO, March 31.—Automobile Associated Trades of Illinois, an association of gasoline and oil distributors (owners of filling stations but having no bulk storage as a rule) will hold a convention in Chicago this spring. The tentative date is May 24. The name of the hotel is not ready to be announced.

F. H. Avery of Chicago, president and manager of the organization has announced that the meeting will last only one day. It will begin at 1 o'clock in the afternoon and last until midnight. There will be a business program in the afternoon and another in the evening, broken up with a banquet and some lighter entertainment at dinner time.

Most of the A. A. T. I. members are in Chicago. Probably half of the membership is scattered over the rest of the state in the larger towns. After the meeting there will be a general observation of "Oil Week" by the service station men. They plan to decorate their establishments and do some constructive merchandising by distributing literature on motor fuels and automotive lubrication.

Only Proven Acreage Gets Attention At Sale of Osage Oil Leases

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, March 31

HEADS nodded slightly or forefingers were lifted fractional inches. The sum of the noddings and liftings at the thirtieth sale of Osage oil leases was $2,437,400. The sale was March 28 and 29.

Real interest attached to a comparatively few of the 584 quarter sections and fractions thereof that were offered. While a big wildcat "spread" had been provided, much of the untested territory was knocked down at $100 per tract.

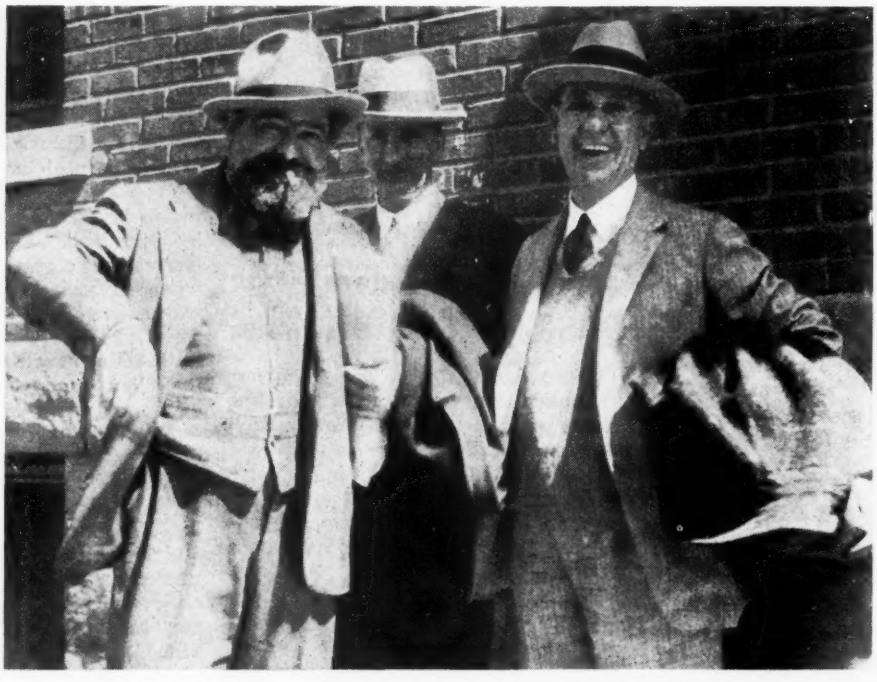
Attention had been centered on 10 tracts southeast of the Burbank field but considerably removed from that field. Two oil wells, five miles apart, were drilled several weeks ago by the Kay County Gas Co., subsidiary of the Marland Oil Co.

The Kay County company had a gas lease on the discovery tracts and, hence was not the owner of the oil after it found it. The discovery quarter sections and offsetting tracts were offered for lease at the sale.

Because of a protest by the Mid-Continent Oil & Gas Association, Secretary Work, of the interior department, placed upon the discovery tracts, the three offsetting tracts to each and two more quarter sections which look favorable for oil production, a restriction of 50 barrels per day to each well that may be drilled, including the discoveries, until overproduction is ended.

The secretary will determine the duration of overproduction.

Three companies appeared on the scene at the first day of the sale with determination writ large upon their faces. A surprise maneuver reduced the competition to two groups. The heavy firing started when Auctioneer E. Walters, vendue crier of all Osage sales, put Tract 153 under the hammer. This is one of the discovery quarter sections and is the SE of 9-23-7E. (May, page 18, March 28 issue of NATIONAL PETROLEUM NEWS shows location of this and other restricted tracts.) The well on this tract had produced 12,219 barrels up to the morning of the sale and its production for the 24 hours prior to its sale was 1017 barrels.



A distinguished sculptor, Jo Davidson, attended the sale and Indians gazed curiously upon his magnificent beard. He was the guest of E. W. Marland, right. Charles C. Brown, executive vice-president of the Marland Oil Co. is in the center

The initial bid was $5,000. Seated well back in the house was John E. Flanagan, land department superintendent for The Texas Co. and other representatives of the company. Up in a box at the right were E. W. Marland, president of the Marland Oil Co., who hated to see the lease get away after his company had proved it; Charles C. Brown, executive vice-president of the company; J. R. McGinley, another official and Henry McGraw, vice-president and general manager of the Gypsy Oil Co. The news was not yet out that the Marland and the Gypsy companies had combined forces.

White Eagle Oil & Refining Co. and Kewanee Oil & Gas Co. were interested in this tract also. Up and up, mostly by thousand dollar jumps, the price rose until The Texas Co. came out of the skirmish winner. The price was $236,000.

The Gypsy-Marland coalition came into public view on the next tract, which offsets the discovery to the west. It paid $51,000 for this; $54,000 for the south offset tract and $50,000 for the southwest offsetting 160 acres. It paid $54,000 for Tract 155, two miles east of the discovery. The future of this latter, which is the SW of 12-23-7E will be closely watched because of the high geological rating that has been put upon it.

Three sands are productive less than five miles east and it has favorable structure evidence.

The sale of these tracts concluded, the auctioneer moved on to the northern of the two discovery wildcats drilled by the Kay County Gas Co. Tract 167, the SW of 22-24-7E, made its first oil on Feb. 28. Its production on the day before it was sold was 898 barrels and its total yield to that time was 30,378 barrels. Gypsy and Marland bought this one for $179,000.

The offset tract to the east went to The Texas Co. for $170,000 and Gypsy and Marland bought the north and northeast offset tracts to the discovery for $136,000 each.

All four tracts of this group are in Sec. 22. Tract 169, included in the 50-barrel per well per day restriction by the secretary, is in the NW of 36-24-7E and is more than two miles southeast of the well in

Sec. 22. Gypsy-Marland bought it for $16,100.

It is understood that the joint purchasing by the Marland and Gypsy companies was a scheme hatched on the day of the sale and that it is a 50-50 purchase. Immediate development of the 10 tracts covered by the restriction is not expected.

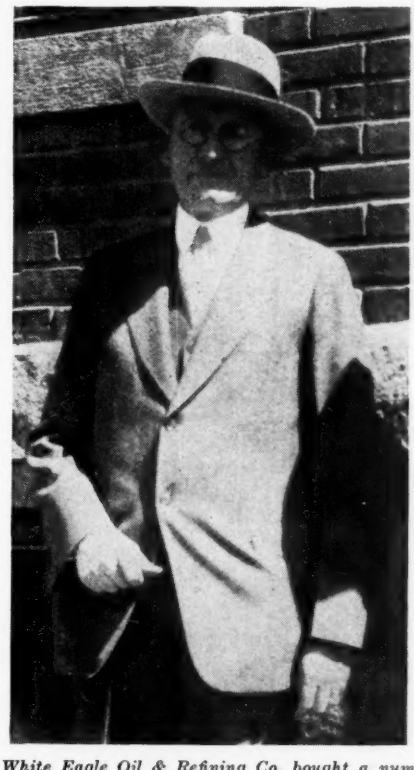
It is possible that the three companies that bought the acreage may work out a plan for operating the leases as a unit. As there is only one royalty interest—the Osage tribe—complications frequently caused by lessors where unit development is planned are absent.

Superintendent J. George Wright, of the Osage agency, told bidders that the royalty on wells restricted to 50 barrels per day would be one-sixth. Where wells average 100 barrels or more per day, the royalty is one-fifth in the Osage, but the department will take the smaller amount until the restrictions are lifted.

Burbank, with its extensions and promises thereof, was the high point of interest at the second day of the sale and one tract brought a price that faintly resembled old times. Kewanee Oil & Gas Co. emerged from the contest over Tract 351 the victor. The price of the victory was $655,000. The lease is on the SW of 21-7-6.

There is excellent production on the north and south adjoining tracts. Prairie Oil & Gas Co., Phillips Petroleum Co., Marland Oil Co., The Texas Co. and others were bidders on this tract. Kewanee has been highly successful in effecting eastward extensions to the field, out in the area of subterranean sandbars past a row of dry holes that marks a dry streak along the east side of the field.

A. G. Oliphant, right, is a specialist in Osage development. At left is L. G. Welsh, geologist. Both are Tulsa residents



White Eagle Oil & Refining Co. bought a number of low priced tracts. President L. L. Marcell, was present the first day

Phillips Petroleum Co., for once not represented by Frank and L. E. Phillips both of them, as is usual, bought the lease on the quarter section next east of the Kewanee's high priced tract—which was the highest price realized at the sale. Phillips, represented by Paul McIntyre, paid $200,000 for this.

One other Burbank tract was given a high rating. This was No. 327, in the SW of 11-26-6E. Lewis Production Co., represented by George Parker, paid $112,000 for this. The Lewis company, like the Kewanee, A. G. Oliphant and others, has realized from purchase of the east extension leases and No. 327 adjoins its own production.

The "east side" of the Osage, being the oldest part of the reservation from standpoint of development, seldom offers tracts at the sales that command substantial prices. No keen interest attached to any of the tracts offered at this sale. Charles B. Peters paid the highest price for "east side" acreage at the last sale. This was $10,100 for the SE of 26-25-9E. It was something of a surprise that it went for that little, for the Peters Petroleum Co. not long ago drilled in a 2,200-barrel Bartlesville sand well on an offsetting tract and the well

Frank Bridges does much of the head-wagging at the auctioneer for the Gypsy Oil Co.

This Station "Hobnobs" With a College

This Colonial cottage service station in Oberlin, O., overcame the higher criticism of some of the "best minds" in that center of learning.

The station belongs to the Cities Service Oil Co. and is situated across from the Oberlin college campus on U. S. highway No. 20, where it is intersected by an important state highway.

On one corner is the college of fine arts and museum, on another is the school of liberal arts and on another is a church. A college professor publicly said one corner was given to spiritual welfare, another to the mind, the third to the arts, and the fourth to materialism. To which diatribe the college paper replied that materialism made possible the college.

When the station was completed most of those who opposed it admitted it was a structure that was a credit to the town and its neighborhood. One student in architecture is said to have won an award for following the style of this structure in a small house design competition.

So well did the station with its beauty overcome the early criticism of nearby property owners that it is said to be one of the best stations in gallonage in the Cities Service chain in Ohio.

is still making around 1,000 barrels daily. Mr. Peters, who teamed with the Producers & Refiners Corp. on this, appeared to have carried off a bargain.

Several faces were missing at this sale. The Carter Oil Co., long a big Burbank operator, was not present at all. A representative said the day before that nobody from that company would go for fear he would be tempted to bid and they believe they have about all the undeveloped acreage right now they can drill within a reasonable time. Besides, they are right up among those who are pleading for less drilling.

Purchase of any of these tracts, except those offsetting production, does not mean drilling. The provision for drilling within 12 months after approval of a lease was suspended and lessees may hold leases for a five-year period without drilling by paying $1 per acre annal rental, beginning after the first 12-month period has elapsed.

Of the 92,000-odd acres offered for sale, nearly 65,000 were so'd. The last previous sale was in December, 1927, when 18,880 acres brought $2,267,650, nearly as much as was realized at the sale just held.

Late Tankwagon Change

(By Telegraph)

DENVER, April 3.—Gasoline was advanced 1 cent at Albuquerque April 3 by the Continental Oil Co. Tankwagon tables on page 125 of this issue do not carry the latest price.

Vacuum Oil Makes Stock Dividend Possible

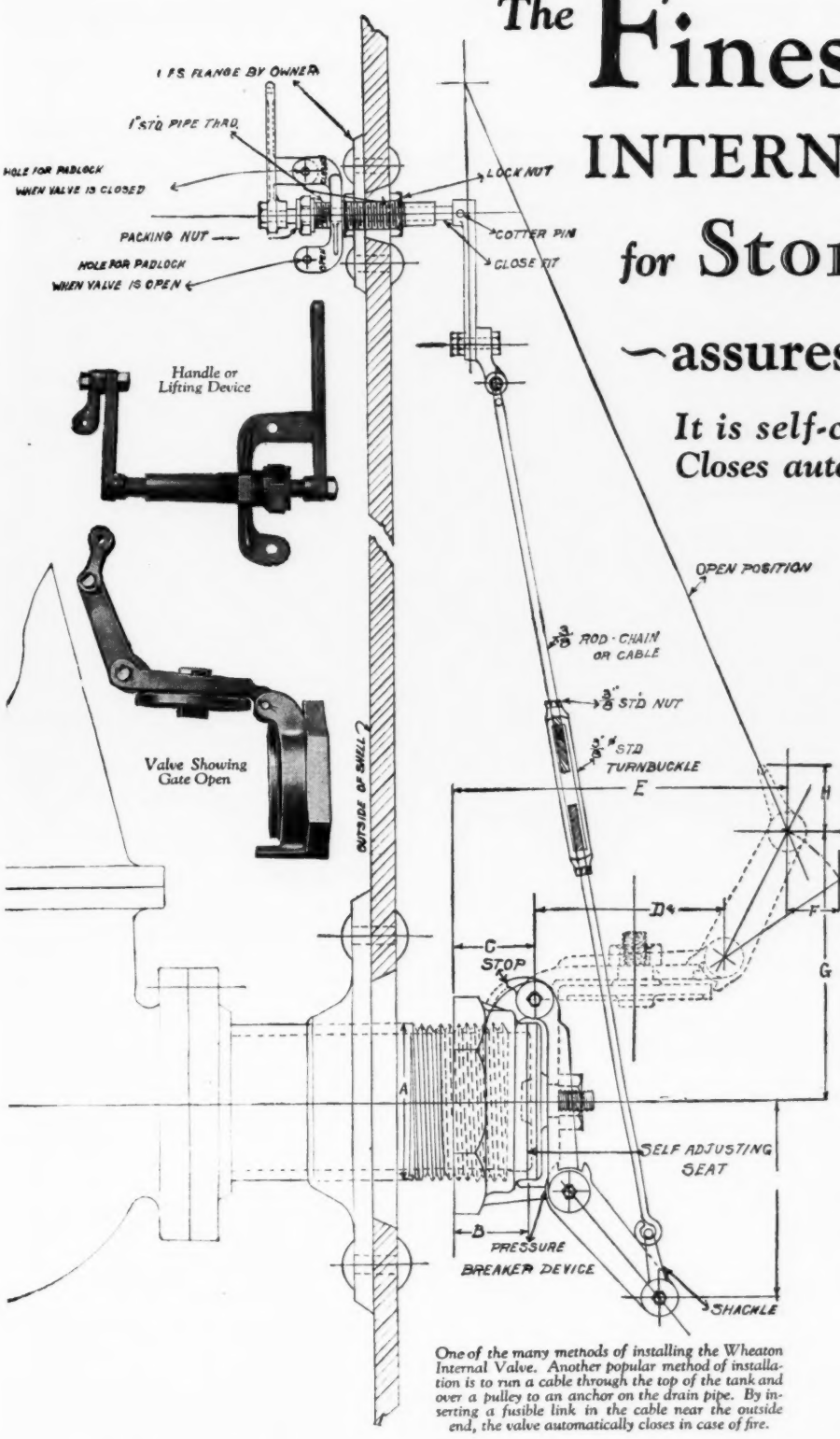
CLEVELAND, April 2.—Vacuum Oil Co. stockholders at their annual meeting March 31 voted to increase the company's capital stock from $70,000,000 to $175,000,000. Payment of a 100 per cent stock dividend is made possible by the increase, of which $10,000,000 is to be set aside for subscription by employes. Dec. 31, 1927, the company had outstanding $62,809,550 of capital stock.

Vacuum was one of the few oil companies that netted more in 1927 than in 1926. After all reserves and federal income taxes Vacuum netted $25,559,899 last year and $24,133,655 in 1926.

The Finest of All INTERNAL VALVES for Storage Tanks

—assures utmost safety

It is self-closing and leak-proof
Closes automatically in case of fire.



One of the many methods of installing the Wheaton Internal Valve. Another popular method of installation is to run a cable through the top of the tank and over a pulley to an anchor on the drain pipe. By inserting a fusible link in the cable near the outside end, the valve automatically closes in case of fire.

THIS Wheaton Internal Valve represents the most advanced development in safety valve design and manufacture. It is absolutely dependable.

As is obvious from the accompanying illustrations, the flow of the liquid closes the valve gate when released; and the perfectly true smooth surface of the rim of the gate, closing against the equally true smooth surface of the flange of the body, makes a leak-proof seal. In opening the valve the seal is "broken" by the cam-like pressure breaker—no sticking, no stress, no strain, no friction.

The drawing at the left shows one of the many methods of installation. The Wheaton Internal Valve can be used on any tank of any height, and in any position or angle desired—vertically, horizontally or obliquely. And the handle device can be located at any height on the wall of the tank or on the top.

By use of a fusible link fitting, the Valve closes automatically in case of fire near the tank. This gives further protection for users of Wheaton Internal Valves.

Protect your stocks from wastage and dangers due to carelessness and imperfect devices. Use Wheaton Internal Valves—they are Wheaton *quality* in every respect. Sizes: 2", 2½", 3", 4", 6", 8" and 10". Order a sample for your own test—returnable for credit or refund.

A. W. WHEATON BRASS WORKS, NEWARK, N. J.

Wheaton

FAUCETS · VALVES · JOINTS · COUPLINGS · FILLERS · NOZZLES · FITTINGS

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended March 30 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	North La.-Ark.	Total Week Ended Mar. 30	Total Week Ended Mar. 2
Plants Reporting	12	28	27	12	79	79
Crude Capacity (bbls.)	92,000	157,200	104,500	54,900	408,600	408,600
Cracking Capacity	30,700	52,600	16,200	22,700	122,200	122,200
Da. Av. Crude Runs	50,590 — 12.5	108,134 — 6.3	72,210 + 0.3	49,128 + 9.6	280,062 — 3.4	264,284
Da. Av. Other Oils	8,987 + 9.3	1,323 — 64.9	4,668 — 8.7	1,562 + 5.8	16,540 — 11.0	13,815
GASOLINE—Gallons						
Stocks, Mar. 23	15,613,000	58,423,000	23,645,000	4,711,000	102,392,000	92,588,000
Prod. 3-23 to 3-30	8,430,000 — 6.4	17,722,000 — 4.2	7,818,000 — 3.5	4,235,000 + 5.8	38,205,000 — 3.6	34,476,000
Ship. 3-23 to 3-30	8,342,000 — 2.9	17,737,000 + 9.0	7,823,000 + 0.1	4,710,000 + 14.2	38,612,000 + 4.9	34,262,000
Stocks, Mar. 30	15,701,000 + 0.6	58,408,000 — 0.03	23,640,000 — 0.02	4,236,000 — 10.1	101,985,000— 0.4	92,802,000
Ratio Sales to Prod.	99.0%	100.1%	100.1%	111.2%	101.1%	99.4%
KEROSENE—Gallons						
Stocks, Mar. 23	3,018,000	6,540,000	1,713,000	520,000	11,791,000	12,761,000
Prod. 3-23 to 3-30	1,534,000 — 1.2	2,654,000 — 20.8	1,592,000 + 4.4	336,000 + 1.8	6,116,000 — 9.5	6,312,000
Ship. 3-23 to 3-30	1,415,000 + 10.4	3,478,000 + 6.3	1,608,000 — 9.7	296,000 — 35.8	6,797,000 + 0.01	7,402,000
Stocks, Mar. 30	3,137,000 + 3.9	5,716,000 — 12.6	1,697,000 — 0.9	560,000 + 7.7	11,110,000 — 5.8	11,671,000
Ratio Sales to Prod.	92.2%	131.0%	101.0%	88.1%	111.1%	117.3%
STOVE DISTILLATE—Gallons						
Stocks, Mar. 23	1,025,000	2,761,000	1,257,000	64,000	5,107,000	5,002,000
Prod. 3-23 to 3-30	373,000 + 6.6	431,000 — 20.3	316,000 + 7.5	114,000 + 1.8	1,234,000 — 4.9	1,251,000
Ship. 3-23 to 3-30	158,000 — 47.7	503,000 — 39.3	427,000 + 59.3	122,000 + 3.4	1,210,000 — 20.2	1,670,000
Stocks, Mar. 30	1,240,000 + 21.0	2,689,000 — 2.6	1,146,000 — 8.8	56,000 — 12.5	5,131,000 + 0.5	4,563,000
Ratio Sales to Prod.	42.4%	116.7%	135.1%	107.0%	98.1%	135.1%
GAS OIL—Gallons						
Stocks, Mar. 23	5,501,000	33,443,000	8,428,000	5,992,000	53,364,000	60,443,000
Prod. 3-23 to 3-30	1,271,000 — 16.0	1,637,000 — 31.2	942,000 + 14.3	1,916,000 — 1.1	5,766,000 — 13.4	8,074,000
Ship. 3-23 to 3-30	1,199,000 — 46.4	3,266,000 +171.5	2,206,000 — 2.4	1,862,000 — 16.2	8,533,000 + 7.7	7,894,000
Stocks, Mar. 30	5,573,000 + 1.3	31,814,000 — 4.9	7,164,000 — 15.0	6,046,000 + 0.9	50,597,000 — 5.2	60,623,000
Ratio Sales to Prod.	94.3%	199.5%	234.2%	97.2%	148.0%	97.8%
FUEL OIL—Gallons						
Stocks, Mar. 23	11,915,000	27,963,000	39,168,000	16,710,000	95,756,000	90,379,000
Prod. 3-23 to 3-30	5,511,000 — 15.8	6,794,000 — 6.9	9,945,000 + 2.1	7,190,000 + 17.4	29,440,000 — 0.9	26,974,000
Ship. 3-23 to 3-30	5,294,000 — 5.9	6,491,000 — 9.2	9,069,000 + 0.4	7,094,000 + 41.8	27,948,000 + 4.2	27,096,000
Stocks, Mar. 30	12,132,000 + 1.8	28,266,000 + 1.1	40,044,000 + 2.2	16,806,000 + 0.6	97,248,000 + 1.6	90,257,000
Ratio Sales to Prod.	96.1%	95.5%	91.2%	98.7%	94.9%	100.5%

Gasoline Produced by Various Methods, Week Ended March 30

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	5,351,000	63.5	13,152,000	74.2	6,474,000	82.8	1,736,000	41.0	26,713,000	69.9
Cracked	2,453,000	29.1	3,208,000	18.1	1,022,000	13.1	1,914,000	45.2	8,597,000	22.5
Natural	626,000	7.4	1,362,000	7.7	322,000	4.1	585,000	13.8	2,895,000	7.6
Total	8,430,000		17,722,000		7,818,000		4,235,000		38,205,000	

+ or — columns are % changed from previous week.

Gasoline Shipments Are Largest Since September

Staff Special—By Telegraph
TULSA, April 3

GASOLINE shipments from 79 Mid-Continent refineries increased 1,800,000 gallons in the week ended March 30. This set a record for shipments this year at 38,612,000 gallons. Gasoline business at reporting plants was larger than at any time since September. Buying was by both jobbers and exporters.

The increase of 4.9 per cent in gasoline shipments failed to bring gallonage up to the level achieved in the last week of March, 1927, 39,712,000 gallons.

In the four weeks ended April 1, 1927, total gasoline shipments were 138,394,000 gallons. In the last four weeks shipments totaled 144,595,000 gallons. Refiners reduced their gasoline production 1,400,000 gallons to 38,205,000 gallons. Stocks were re-

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended March 30. Change in stocks figured from March 2.

GASOLINE

	Gallons
Production	153,778,000
Shipments	144,595,000
Net change in stocks	+ 9,183,000
Ratio sales to production	94.0%

KEROSENE

Production	26,137,000
Shipments	26,698,000
Net change in stocks	— 561,000
Ratio sales to production	102.1%

STOVE DISTILLATE

Production	5,488,000
Shipments	4,920,000
Net change in stocks	+ 568,000
Ratio sales to production	89.7%

GAS OIL

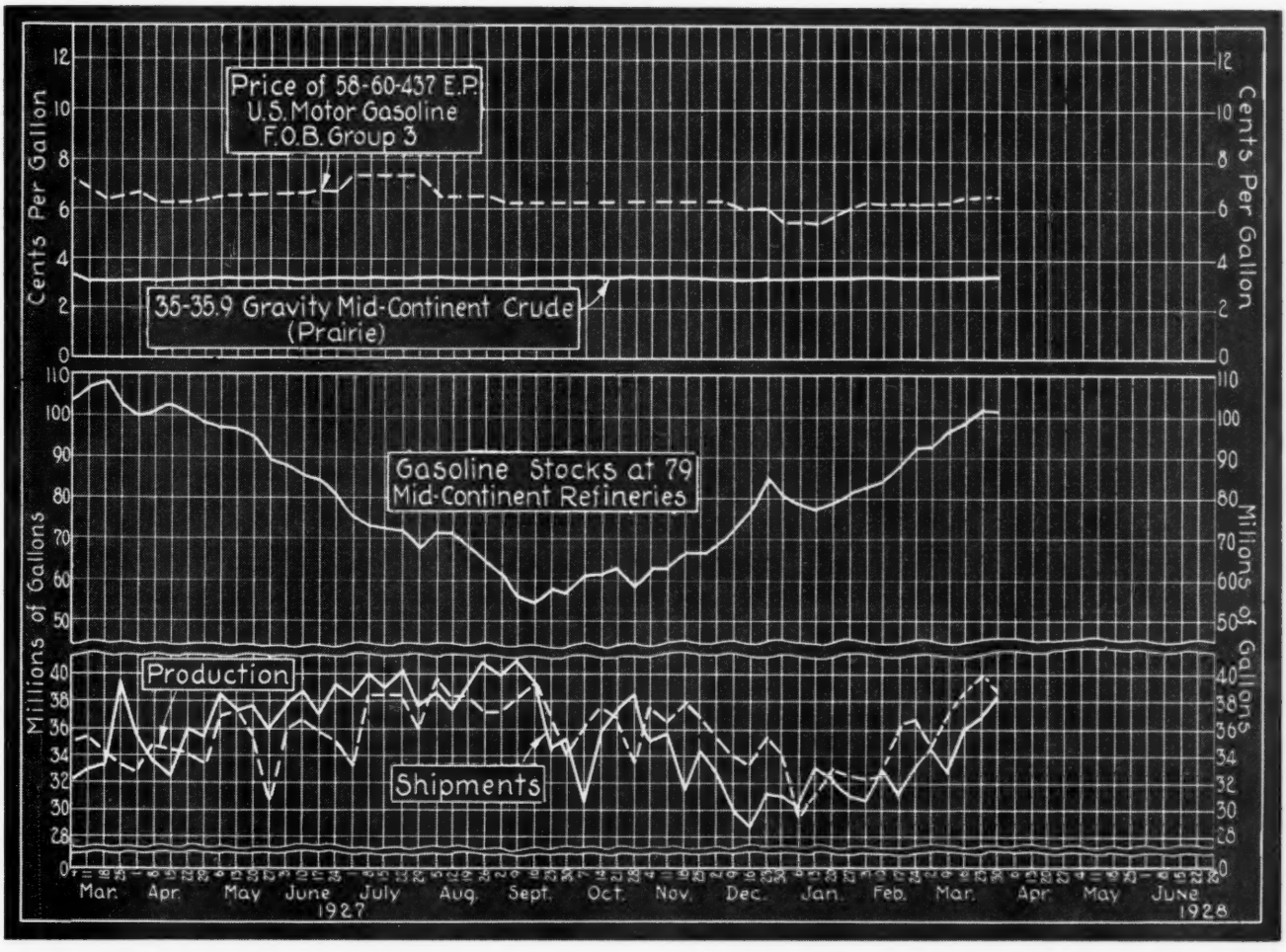
Production	25,056,000
Shipments	35,082,000
Net change in stocks	— 10,026,000
Ratio sales to production	140.0%

FUEL OIL

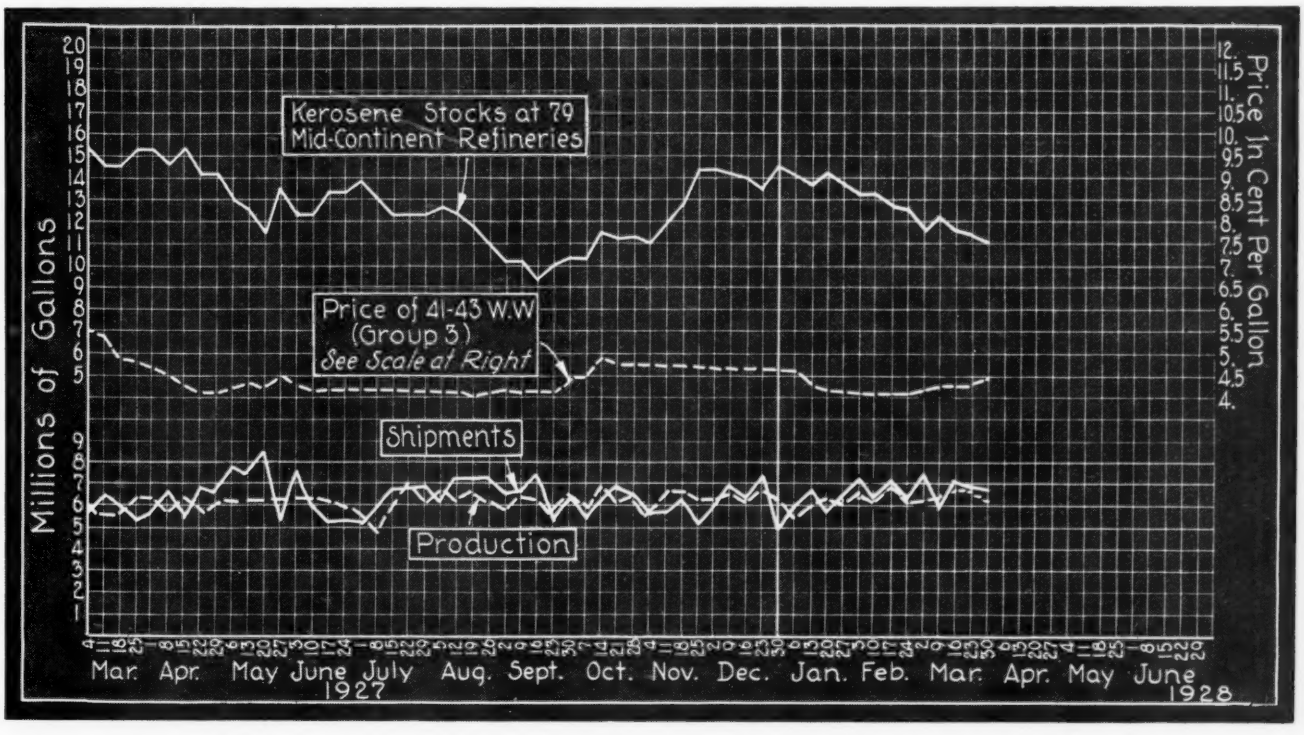
Production	119,150,000
Shipments	112,159,000
Net change in stocks	+ 6,991,000
Ratio sales to production	94.1%

Barometer of Mid-Continent Refinery Market—Week Ending March 30

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 79 Plants to National Petroleum News

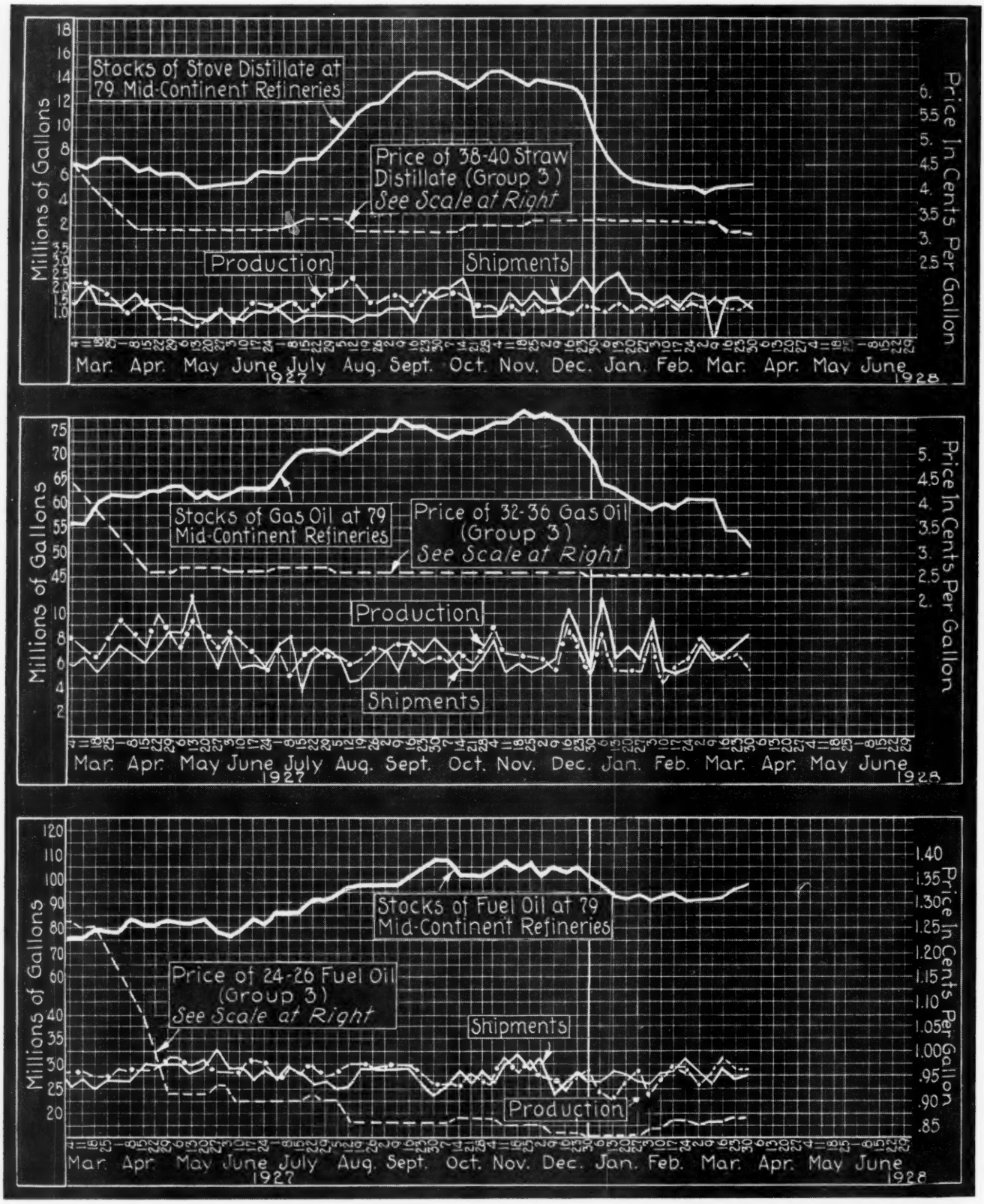

Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at 79 Mid-Continent Refineries
Millions of Gallons
Production
Shipments
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date shown in table on opposite page

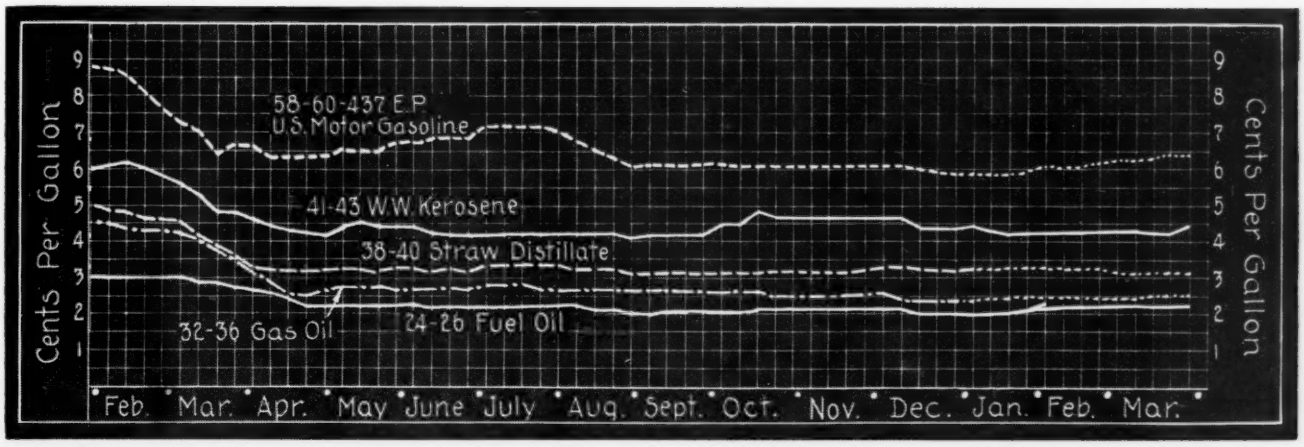

Kerosene Stocks at 79 Mid-Continent Refineries
Millions of Gallons
Price of 41-43 W.W (Group 3) See Scale at Right
Price In Cent Per Gallon
Shipments
Production
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928

Barometer of Mid-Continent Refinery Market—Week Ending March 30

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 79 Plants to National Petroleum News


Stocks of Stove Distillate at 79 Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) See Scale at Right
Production
Shipments
Millions of Gallons
Price In Cents Per Gallon
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928
Stocks of Gas Oil at 79 Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
Millions of Gallons
Price In Cents Per Gallon
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928
Stocks of Fuel Oil at 79 Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Shipments
Production
Millions of Gallons
Price In Cents Per Gallon
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.

Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this Issue

duced nearly 500,000 gallons to 101,985,000 gallons. A year ago gasoline stocks at the same plants totaled 102,751,000 gallons.

The reduction in gasoline production was the result of a 3.4 per cent curtailment in crude runs which averaged 280,062 barrels a day, compared with 290,054 barrels the preceding week. A year ago crude runs averaged 279,697 barrels.

Oklahoma refiners reduced their runs 7,000 barrels daily average and the Kansas refiners almost 7,000 barrels. Texas refiners' runs were not changed materially. The North Louisiana and Arkansas group increased its runs 4,000 barrels daily average.

Shipments of kerosene were unchanged at 6,797,000 gallons. With production down 109,000 gallons to 6,116,000 gallons stocks were lowered 681,000 gallons to 11,110,000 gallons. A year ago stocks were 15,326,000 gallons.

Refiners have curtailed production of stove distillate approximately to the level of current requirements. Production of distillate last week totaled 1,234,000 gallons and shipments 1,210,000 gallons. Stocks were increased only 24,000 gallons to 5,131,000 gallons. A year ago stocks totaled 7,250,000 gallons but demand was larger then.

Since Jan. 1 the 79 refiners have been working down their stocks of gas oil. Dec. 30 stocks totaled 67,776,000 gallons. March 30 the total was 50,597,000 gallons. A year ago stocks were 12,000,000 gallons larger than at present.

Refiners have not been able to cut down their stocks of fuel oil as much as their stocks of gas oil. Fuel oil stocks total 97,248,000 gallons. Dec. 30, 1927, the total was 100,329,000 gallons. Last week stocks increased 1,500,000 gallons.

Freight Rate Reduction For North Dakota

CHICAGO, March 31.—A suit for the reduction of freight rates on petroleum products from Group 3 to North Dakota, sponsored by the North Dakota Petroleum association, was terminated successfully in Washington on March 5. Paul Hadlick, secretary of the N. D. P. A. has announced the victory to his membership.

The adjustment reduces gasoline rates varying amounts all over the state. The saving to the jobber will be 3 cents per 100 pounds at Fergus Falls and 23 cents per 100 pounds at Williston. The average saving is about 6 cents per 100 pounds. At one destination, Grand Rapids, the oil industry takes a loss of 6 cents per 100 pounds.

The revised rates become effective next June 14 and are not retroactive, so the oil men will not be able to collect anything from the carriers for over charges in the past.

Weighted Average Prices Oklahoma Market

In line with National Petroleum News' new policy of carrying a weighted average price for the four more important Oklahoma gasolines in its market section, these weighted average prices, together with the number of cars of each grade sold, as of Monday, April 2, are published below. The figures are not available for publication in the refinery market table on page 122 of this issue.

	Total Cars	Weighted Average
58-60 U. S. Motor, 437 e. p.	168	6.5360
60-62, 437 e. p.	37	6.6318
60-62, 400 e. p.	61	6.7213
64-66, 375 e. p.	2	7.1875

Note: Above prices are in cents per gallon, f.o.b. Oklahoma refinery, in tank car lots.

World's Record Broken With S. O. Products

CHICAGO, March 31.—Allan Jackson, vice president of Standard Oil Co. of Indiana on March 30 received a telegram from Eddie Stinson who broke the world's sustained flight record that day in Jacksonville, Fla., giving part credit for his success to the products of the Standard Oil Co. of Indiana. The telegram read:

"We successfully broke the world's sustained flight in 53 hours, 36 minutes today using Stanolind aviation gasoline and Stanolind Aero oil. Gasoline consumption approximately 10 gallons per hour and oil consumption five gallons for the entire flight, thanks to your products."

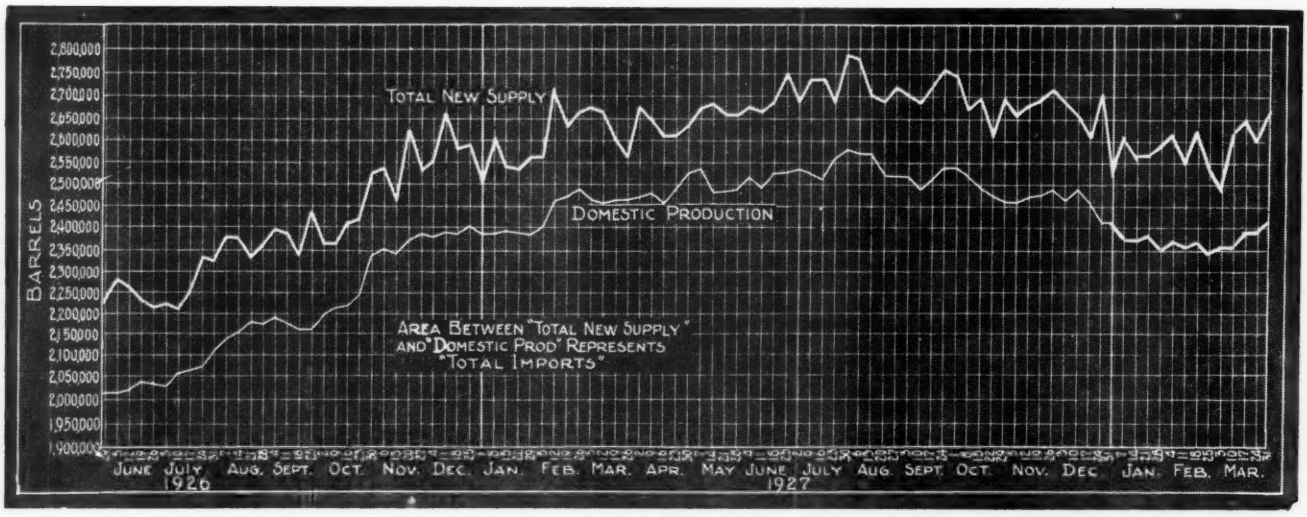
The daily press reported that the world's endurance flight record was brought back to America by Mr. Stinson, the Detroit airplane manufacturer and George Haldeman, trans-Atlantic flyer, in a Stinson-Detroiter after remaining aloft 53 hours, 36 minutes and 30 seconds. They took off with 580 gallons of gasoline and brought back five gallons.

Eastern Kentucky Market

ASHLAND, Ky., April 2.—April 2 prices, f.o.b. eastern Kentucky refinery, are:

60-62 425 e.p. gasoline	9.25c
64-66 375 e.p. gasoline	9.375c
68-79 360 e.p. gasoline	9.50c
41-43 kerosene	6.875c
24-26 fuel oil	3.625c

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	March 31	March 24
Production east of Rockies	**1,783,100**	**1,769,000**
Increase		**14,100**
Total production in U. S.	**2,412,600**	**2,387,000**
Increase		**25,600**
Crude oil imports	**251,714**	**225,571**
Increase		**26,143**
Total crude supply	**2,664,314**	**2,612,571**
Increase		**51,743**

OKLAHOMA

	Mar. 31	Mar. 24
North Braman	2,800	2,850
South Braman	1,800	1,850
Blackwell	3,750	3,705
Hubbard	2,700	2,650
Thomas	1,450	1,500
Tonkawa	14,850	14,800
Garber	9,900	9,950
Burbank	40,150	41,950
Osage, outside Burbank	30,500	30,300
Watchorn	700	950
Cushing	21,100	21,100
Yale Jennings	8,750	8,850
Davenport	2,200	2,300
Bristow-Slick	24,600	24,700
North Okmulgee	15,650	15,700
Lyons-Deaner	7,200	7,300
Stroud	1,100	1,100
Cromwell	10,150	10,200
Papoose	5,050	5,000
Wewoka	7,850	7,800
Seminole	55,550	55,800
Bowlegs	79,300	82,550
Searight	17,550	17,750
Little River	39,650	40,100
Earlsboro	96,150	97,800
Duncan district	6,650	6,550
Graham	5,900	5,900
Fox	1,750	1,750
Healdton	14,100	14,100
Hewitt	8,700	8,800
Scholem Alechem	13,500	13,200
Others	84,250	85,200
Total, Oklahoma	635,300	644,100
Decrease		8,800

KANSAS

	Mar. 31	Mar. 24
Greenwood County	30,000	30,100
Florence-Covert	1,400	1,400
Peabody-Elbing	3,700	3,700
Eldorado-Towanda	14,200	14,200
Augusta-Fox-Bush	4,100	4,150
Rainbow Bend	1,700	1,650
Russell	2,750	2,800
Churchill	11,750	11,450
Oxford	19,100	16,500
Others	25,200	25,500
Total, Kansas	113,900	111,450
Increase		2,450

NORTH LOUISIANA

	Mar. 31	Mar. 24
Homer	4,400	4,400
Haynesville	6,250	6,250
Caddo, Light	10,300	10,700
Caddo, Heavy	3,950	3,900
De Soto, Red River	4,100	4,100
Elm Grove	600	550
Bellevue	1,050	1,100
Cotton Valley	4,500	4,500
Urania	7,750	7,800
Pleasant Hill	600	700
Total, North Louisiana	43,500	44,000
Decrease		500

ARKANSAS

	Mar. 31	Mar. 24
El Dorado	5,400	5,450
Champagnolle	1,000	900
Smackover, light	8,250	8,300
Smackover, heavy	64,600	65,450
Stephens	1,100	1,100
Nevada	1,550	1,600
Lisbon	2,350	2,350
Others	150	150
Total, Arkansas	84,400	85,300
Decrease		900

TEXAS (OUTSIDE GULF COAST)

Panhandle District

	Mar. 31	Mar. 24
Hutchinson County	43,300	43,700
Carson County	7,550	6,800
Gray County	22,350	19,800
Wheeler County	1,150	1,050
Others	50	50
Total, Panhandle District	74,400	71,400
Increase		3,000

North Texas

Burkburnett	13,100	13,000
Electra	11,900	11,750
Iowa Park and K-M-A	1,950	1,950
Wilbarger	9,500	9,750
Archer County	18,250	18,500
Montague-Cooke	11,900	12,000
Others	600	600
Total, North Texas	67,200	67,550
Decrease		350

West Central Texas

Stephens County	7,450	7,600
Eastland-Desdemona	9,000	8,900
Brown County	12,750	12,600
Coleman County	1,900	1,850
Callahan County	4,300	4,200
Shackleford County	8,600	8,350
Young County	8,200	8,300
Throckmorton County	1,000	1,000
Palo Pinto County	500	500
Jack County	1,400	1,350
Others	600	600
Total, West Central Texas	55,700	55,250
Increase		450

West Texas

Jones County	1,150	1,200
Mitchell and Scurry Counties	3,300	3,200
Howard County	4,250	4,200
Reagan County	19,300	19,500
Crane and Upton Counties	81,700	84,250
Crockett County	2,900	2,500
Pecos County	48,650	45,000
Winkler	197,400	180,100
Others	2,000	2,100
Total, West Texas	360,650	342,050
Increase		18,600

East Central Texas

Mexia	7,350	7,400
Currie	550	550
Richland	550	550
Wortham	1,950	2,000
Corsicana-Powell	11,700	11,750
Nigger Creek	1,200	1,200
Total, East Cent. Texas	23,300	23,450
Decrease		150

Southwest Texas

Luling	13,500	13,750
Lytton Springs	1,500	1,500
Somerset	800	800
Laredo District	6,650	6,600
Piedras Pintas	.....	.....
Dale	1,200	900
Others	400	400
Total, Southwest Texas	24,050	23,950
Increase		100
Total, Texas—(Outside Gulf Coast)	605,300	583,650
Increase		21,650

GULF COAST

Coastal Texas

	Mar. 31	Mar. 24
West Columbia	7,750	8,000
Damon Mound	850	850
Big Creek	1,700	1,750
Boling	2,400	2,800
Blue Ridge	5,600	7,000
Pierce Junction	13,200	9,000
Humble	1,300	1,400
Goose Creek	7,150	7,150
South Liberty	3,050	3,400
Hull	11,600	11,600
Saratoga	1,100	1,050
Batson	1,400	1,400
Barber's Hill	600	600
Sour Lake	3,500	3,500
Spindletop	36,800	35,700
Orange County	4,300	3,800
Others	1,800	2,000
Total, Coastal Texas	104,100	101,000
Increase		2,900

Coastal Louisiana

	Mar. 31	Mar. 24
Vinton	4,800	4,900
Lockport	4,000	4,050
Evangeline	900	950
East Hackberry	1,900	1,950
Edgerly	1,450	1,400
Sweet Lake	250	250
Others	3,300	4,250
Total, Coastal Louisiana	16,600	17,750
Decrease		1,150
Total Gulf Coast	120,700	118,750
Increase		1,950

ROCKY MOUNTAIN

Wyoming

Salt Creek	38,200	41,050
Grass Creek	2,450	2,500
Elk Basin	1,000	1,100
Big Muddy	2,700	3,200
Lost Soldier	2,700	2,850
Rock Creek	2,500	2,500
Lance Creek	700	750
Teapot Dome	.....	.....
Others	4,500	4,900
Total, Wyoming	54,750	58,850
Decrease		4,100

Montana

Cat Creek	1,800	1,800
Sunburst	10,000	10,000
Others	150	150
Total, Montana	11,950	11,950

Colorado

Moffat (Craig)	1,600	1,450
Fort Collins	3,250	3,200
Florence	1,300	1,100
Others	1,750	1,700
Total, Colorado	7,900	7,450
Increase		450

New Mexico

Table Mesa	100	.....
Hogback	500	500
Artesia	1,150	1,150
Rattlesnake	450	400
Others	200	200
Total N. Mexico	2,400	2,250
Increase		150
Total, Rocky Mountain	77,000	80,500
Decrease		3,500

California

Santa Fe Springs	37,500	37,500
Long Beach	130,000	123,500
Huntington Beach	56,500	57,500
Torrance	18,500	19,000
Dominguez	12,500	12,500
Rosecrans	7,000	7,000
Inglewood	29,500	29,500
Midway-Sunset	81,000	81,000
Ventura Avenue	53,500	47,500
Seal Beach	40,000	39,000
Others	163,500	164,000
Total California	629,500	618,000
Increase		11,500

Eastern

(Including Ill., Ind., Ky., O., W. Va., Pa., and N. Y.)	103,000	101,250
Increase		1,750

p-816-L

Typical Waukesha-Powered Oil Flowing Plant Located at Pearson, Oklahoma

Quick Inexpensive Installations

Production men don't overlook this advantage inherent in all Waukesha Oil Field Power Plants. The plant shown above clearly illustrates this. But more important, these simple, inexpensive foundations are practically the only loss when the power plant is moved to another location.

Since wells, requiring a battery of engines when new, may only require one or two when older, these features of portability, compactness and completeness of unit—and minimum set up cost, are very important. They are incorporated in both the Stationary Power Units and the weather-proofed completely housed Oil Field Power Units. This equipment is built in several sizes up to 125 H. P. Write for Oil Field Bulletin, No. 629, describing them.

P-824-L

OIL INDUSTRY EQUIPMENT DIVISION

WAUKESHA MOTOR COMPANY

Waukesha Wisconsin

New York	Tulsa	Houston	San Francisco
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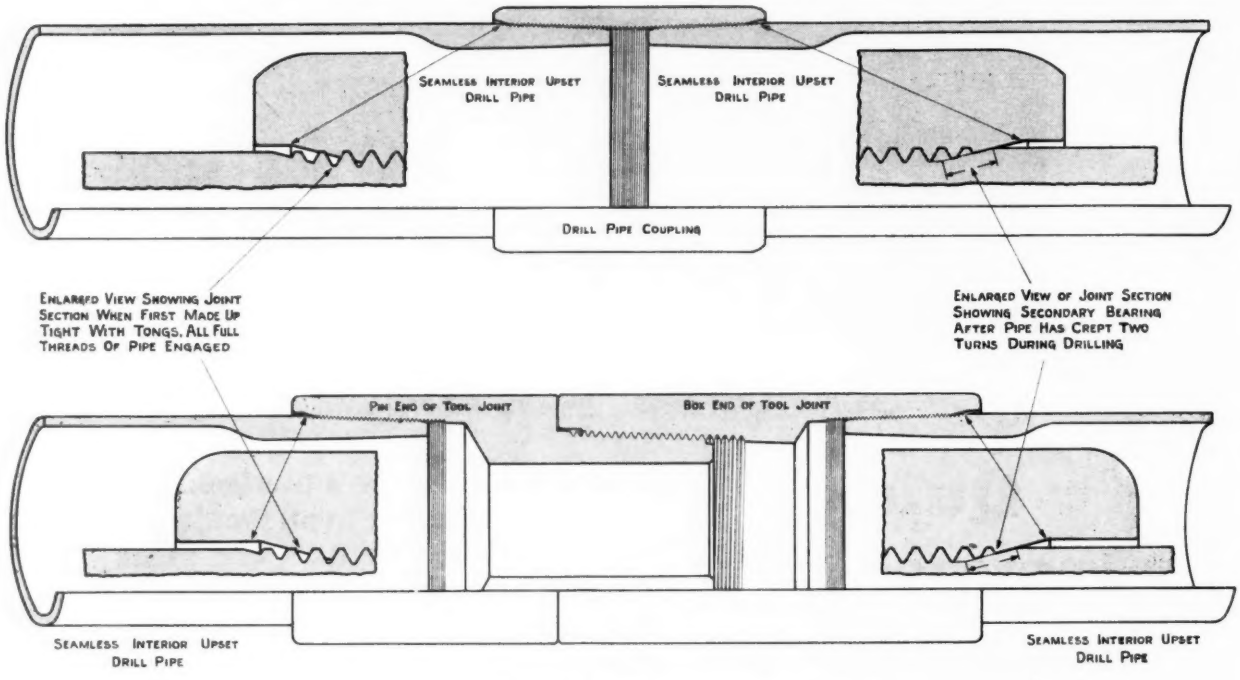
Exclusive Builders of Heavy Duty Gasoline Engines for Over Twenty Years

"NATIONAL"

A.P.I.

Seamless Interior Upset Drill Pipe


Seamless Interior Upset Drill Pipe
Seamless Interior Upset Drill Pipe
Drill Pipe Coupling
Enlarged View Showing Joint Section When First Made Up Tight With Tongs. All Full Threads Of Pipe Engaged
Enlarged View of Joint Section Showing Secondary Bearing After Pipe Has Crept Two Turns During Drilling
Pin End of Tool Joint
Box End of Tool Joint
Seamless Interior Upset Drill Pipe
Seamless Interior Upset Drill Pipe

Special Features

1. *Rounded Form of Thread*
2. *Thickest Part of Upset Under Last Full Thread*
3. *All Threads of Pipe Fully Engage*
4. *Angle of Shoulder Threads Forms Secondary Bearing*
5. *Entering Threads on Pipe and Coupling Same Angle*

These special features when worked in combination with properly designed tool joints make the most efficient drill string it is possible to secure at this time. To obtain the maximum service from this pipe, the operator should use tool joints designed to give the same fit as the couplings. These tool joints should have vanishing threads at the bottom of the recess to correspond to the angle of vanish on the shoulder of the pipe, and the tool joints should be tapped large enough to permit them to screw up by power until all full threads on the pipe are engaged by the threads of the tool joints.

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Pottawatomie County Pools Next to be Subject of Restrictive Plans

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, March 31 UNATTENDED by discoveries of importance or production increase or decrease that was noteworthy, the Mid-Continent territory during the past week found the chief item of importance the sale of Osage oil leases at Pawhuska.

This event was humdrum, as compared with many previous sales. Even the Osage is unable to muster up much that is not routine nowadays.

While a large number of tracts were sold March 28 and 29, little drilling is expected to follow. A few of the new leases adjoining Burbank production will have to be drilled as to offset wells. The entire sale probably will call forth a maximum of 25 wells to be started soon.

Talk persists in favor of widening of the Seminole shut down policy to include all the Mid-Continent territory. Umpire Collins and the operators' committee will call a meeting within a few days to see what can be done about the Twp. 7-4 country, of Pottawatomie county, southwest of the Seminole district. Production recently has been obtained in wells outside the Pearson and St. Louis pools. The new wells were of large enough caliber to indicate possibilities of substantial pools in the Hunton lime and the upper Simpson formation, both horizons above the Wilcox. No big campaign has been started and it is the desire of most of the lessees in that area to talk things over with a view of cutting down every well possible.

Notable recent wells in this area are the Gypsy Oil Co.'s No. 2 McGee, NW SW NE of 23-7-4E, which is holding up around 1600 barrels, agitating; McCulloch & Mid-Continent Petroleum Corp. No. 1 Smith, NW SE of 25-7-4, deepened during the week one foot to 4177 feet with an increase in production to 100 barrels per hour the first three hours and now making around 2,000 barrels daily; Magnolia Petroleum Co.'s No. 2 Robbins, SW SE SE of 15-7-4, which originally had production of around 4,000 barrels daily and on March 30 made 2400 barrels.

This, at present, constitutes one of two really active areas in Oklahoma, the other being the Allen pool of Seminole and Hughes counties. The latter is going ahead with upward of 40 wells drilling.

Oh yes, there is one other active spot which must be mentioned. Muskogee, Okla., after being in the backwaters of oil territory for years, now comes forward with a fine town-lot campaign. Some local enthusiasts refer to the pool as "Little Seminole."

The play is being staged on an addition to the city, about one and a half miles from the business section. The acreage is a 25-foot front lot proposition.

The field would rival Seminole in a little while if all the reports on the performance of wells were true. However, the cold facts are that on Friday the nine producing wells made a total of 350 barrels. The production is found in the upper part of the Dutcher series, about 12 to 15 feet of pay sand being the rule, at around 500 feet depth. The oil is 44 degree A. P. I. gravity. Wells are drilled with little outfits, such as are used for water well drilling, and are completed in five to six days.

The important well of the Amerada Petroleum Corp., in the SW SE NE of 1-8-4, which will prove or disprove to some extent the existence of a major pool in the Twp. 8-5 territory, as indicated by the Barnsdall Oil Co.'s producer in 14-8-5, has been held up by a fishing job. That has been cleaned up and the well is at total depth of 4252 feet. It should be a completion in the Wilcox before many more days pass.

Long Beach Field Likely to Reach 200,000 Barrels

LOS ANGELES, March 31.—Long Beach is very much in the limelight and is the only field in California threatening new production of any consequence.

It is now estimated that the field's peak will be at least 175,000 barrels daily, and may reach 200,000 barrels.

Seven new wells were placed on production this week in the deeper zone, for an average exceeding 2000 barrels to the well. Wells completed during the past six weeks required an average time of four and one-half months to complete.

By checking starting dates of the 218 wells now drilling in the field, all going for the deeper zone, it is figured that an average of 40 wells are due for completion each month until July 1. Another point not to be overlooked, is that at least 100 more wells could easily be started for the deeper sand.

As an oil well is seldom completed on schedule, even in an old field, it is estimated that at least 20 wells a month can be expected to be placed on production. The wells now producing from the lower zone are averaging slightly better than 1200 barrels per well.

The bottom of the lower zone has not yet been found by any drilling well. This week, Shell Co. stopped drilling in a well on top of the structure at 7060 feet, and preparations are being made for a production test.

The bit was still in oil sand. If this well proves to be unusually good, naturally other wells will drill deeper also. Average completion depths of wells recently placed on production range from 6000 to 6500 feet.

The biggest factor to be considered at Long Beach, is the fairly well established fact that the production will be well sustained, with wells being completed in sufficient numbers after January to hold the daily average fairly high until the end of the year. It is thought that the Long Beach production for the balance of the year will be around 150,000 barrels daily, at least.

Gulf Coast Gets Its 34th Oil Field

HOUSTON, March 29. — Dewalt dome, near Sugarland, Fort Bend county, about 15 miles from Houston, became the thirty-fourth producing oil field of the Gulf Coastal region when Humble Oil & Refining Co. completed a 1000-barrel well at 3520 feet in its No. 1 Sugarland Industries test.

Presence of a deep-seated salt dome had been indicated by geophysical instruments in advance of drilling, but the completion of an oil discovery well in the first test operation put down was unusual. Humble owns all the close-in acreage, which was solidly blocked except for properties of the Gulf Production Co., away from the discovery well. As in the case of most of the recently discovered Gulf Coastal salt dome

(*Continued on Page* 47)

Seminole District Production by Companies and Leases, March 28 and March 21, 1928

BOWLEGS

Company	Farm	S.T.R.	Mar 28th Wells	Mar 28th Prod.	March 21st Wells	March 21st Prod.
Amerada	Rascoe	15- 8-6	8	2,135	8	2,005
Atlantic	Baker	1- 8-6	4	515	4	575
Atlantic	Fleet	23- 8-6	3	550	4	415
Atlantic	Grayson	21- 8-6	4	494	3	769
Atlantic	A. Jones	10- 8-6	3	95	3	95
Atlantic	C. Jones	9- 8-6	2	193	2	183
Total Atlantic			15	1,847	16	2,137
Barnsdall	McNac	28- 8-6	1	28	1	30
Barnsdall	Murrow	11- 8-6	4	837	4	927
Total Barnsdall			5	865	5	957
Carter	Bowlegs	15- 8-6	4	1,450	4	1,500
Carter	Burden	23- 8-6	3	250	3	295
Carter	Harjoche	15- 8-6	6	680	6	720
Carter	Hilly	23- 8-6	3	885	3	910
Carter	Jones	11- 8-6	4	1,465	4	1,465
Carter	McGeisey	21- 8-6	1	0	1	0
Carter	Melisse	9- 8-6	1	130	1	175
Carter	Walker	15- 8-6	4	670	4	700
Carter	Wise	23- 8-6	12	3,415	12	3,460
Total Carter			38	8,945	38	9,225
Empire	Lacey	15- 8-6	6	564	6	525
Empire	Wise	23- 8-6	2	457	2	482
Total Empire			8	1,021	8	1,007
Gypsy	Bowlegs	22- 8-6	1	170	1	160
Gypsy	Bradley	8- 8-6	1	2	1	0
Gypsy	Cumsey	8- 8-6	4	1,475	4	1,512
Gypsy	Dosar	7- 8-6	1	100	1	100
Gypsy	Grayson	13- 8-6	4	885	4	950
Gypsy	Harjoche	10- 8-6	2	3,327	2	3,327
Gypsy	Jones	11- 8-6	1	287	1	312
Gypsy	Walker	15- 8-6	8	2,002	8	1,907
Gypsy	Wise	23- 8-6	3	245	3	292
Total Gypsy			25	8,493	25	8,560
I. T. I. O.	Barnett-A	24- 8-6	2	350	2	355
I. T. I. O.	Barnett-B	24- 8-6	1	274	1	242
I. T. I. O.	Billington	22- 8-6	5	839	5	872
I. T. I. O.	Bowlegs	22- 8-6	10	1,577	11	1,528
I. T. I. O.	Davis	13- 8-6	4	1,301	4	1,297
I. T. I. O.	Fay	18- 8-6	9	2,383	9	2,469
I. T. I. O.	Goforth	15- 8-6	12	1,593	12	1,566
I. T. I. O.	Livingston	15- 8-6	11	3,120	11	3,314
I. T. I. O.	Lizzie	11- 8-6	2	481	2	517
I. T. I. O.	Walker	15- 8-6	8	861	8	893
I. T. I. O.	Wilmott	15- 8-6	4	646	4	721
I. T. I. O.	Work	23- 8-6	1	140	1	150
I. T. I. O.	Youngblood	22- 8-6	2	38	2	65
Total I. T. I. O.			73	13,809	72	13,989
McCulloch	Bowlegs	22- 8-6	2	390	2	389
Magnolia	Davis	13- 8-6	3	587	3	655
Magnolia	Davis-M	13- 8-6	1	275	1	273
Magnolia	Hammond	10- 8-6	3	492	3	402
Magnolia	Rhodes	10- 8-6	3	4,520	3	4,610
Magnolia	Van Buskirk	9- 8-6	1	323	1	357
Total Magnolia			11	6,197	11	6,686
Mid-Continent	Baker	10- 8-6	4	1,297	4	1,541
Mid-Continent	Bowlegs	22- 8-6	1	60	1	55
Mid-Continent	Smith	12- 8-6	6	570	6	600
Total Mid-Continent			11	1,927	11	2,196
Minnehoma	Bowlegs	15- 8-6	4	325	4	290
Prairie	Gahagan	23- 8-6	4	395	4	455
Prairie	Harber	10- 8-6	8	3,450	8	3,935
Prairie	Jones	11- 8-6	4	125	4	425
Prairie	Templeton	12- 8-6	6	2,605	6	2,695
Prairie	Whitney	23- 8-6	4	515	4	520
Total Prairie			26	7,090	26	8,030
Pure	Reed	14- 8-6	15	2,666	15	2,695
Pure	Strother-D	14- 8-6	4	549	4	544
Pure	Strother-F	10- 8-6	4	1,380	4	1,304
Total Pure			23	4,605	23	4,533
Roxana	Taylor	16- 8-6	5	696	5	633
Shaffer	Lacey	14- 8-6	3	387	3	295
Sinclair	Bowlegs	22- 8-6	1	85	1	50
Sinclair	Cumsey	10- 8-6	4	4,406	4	4,546
Sinclair	Ellen	11- 8-6	7	1,440	7	1,375
Sinclair	Harjo	14- 8-6	3	710	3	720
Sinclair	Jones	8- 8-6	6	3,940	6	4,118
Sinclair	Taylor-M	10- 8-6	4	2,667	4	2,734
Sinclair	Taylor-W	10- 8-6	1	1,242	1	1,338
Sinclair	Walker	22- 8-6	4	1,070	4	705
Total Sinclair			30	15,560	30	15,586
Texas	Reed	14- 8-6	11	2,860	11	2,875
Tidal	Grayson	13- 8-6	4	810	4	850
Tidal	Harjoche	10- 8-6	6	1,835	6	1,849
Total Tidal			10	2,645	10	2,699
Twin State	Jones	10- 8-6	3	107	3	100
TOTAL BOWLEGS			313	79,894	311	81,813

LITTLE RIVER

Amerada et al	Fore	35- 8-6	2	850	2	915
Amerada	Nitey	35- 8-6	3	2,835	3	2,915
Total Amerada			5	3,685	5	3,830
Barnsdall	Hotulke	22- 8-6	1	40	1	40
Blackwell	Nitey	35- 8-6	6	2,123	6	2,666
Carter	Fish	1- 7-6	6	1,535	6	1,695
Carter	Jackson	11- 8-6	1	825	1	285
Total Carter			7	2,360	7	1,980
Continental	Cosar	2- 7-6	4	2,200	3	1,850
Gypsy	Brown	33- 8-6	1	50	1	50
Gypsy	Campbell	36- 8-6	2	200	2	142
Gypsy	Nungee	35- 8-6	1	37	1	25
Gypsy	Pottey	36- 8-6	3	414	3	495
Total Gypsy			7	701	7	712
Independent	Harris	23- 7-6	1	2,707	1	2,722
Indep. et al	Davis	2- 7-6	3	1,895	2	1,720
Total Indep.			4	4,602	3	4,442
I. T. I. O.	Campbell	1- 7-6	1	108	1	112
I. T. I. O.	Dungan	35- 8-6	3	2,507	3	2,496
I. T. I. O.	House	1- 7-6	1	174	1	278
I. T. I. O.	A-House-W	1- 7-6	1	48	1	59
I. T. I. O.	B-House-W	2- 7-6	3	1,528	3	1,619
I. T. I. O.	Hull	26- 8-6	1	65	1	65
I. T. I. O.	Jackson	1- 7-6	3	2,088	3	2,126
I. T. I. O.	McCulla	1- 7-6	3	940	3	935
I. T. I. O.	Nitey	2- 7-6	7	1,350	7	1,464
I. T. I. O.	Phoebe	35- 8-6	3	855	3	780
I. T. I. O.	Phoebe-B	36- 8-6	4	355	4	396
I. T. I. O.	Reed	1- 7-6	1	77	1	486
I. T. I. O.	Sotkneche	1- 7-6	4	935	4	881
Total I. T. I. O.			35	11,030	35	11,695
Magnolia	Cruse	2- 7-6	1	480	1	516
Magnolia	Dixon	31- 8-7	1	32	1	49
Magnolia	Pottey	34- 8-6	4	720	4	980
Total Magnolia			6	1,232	6	1,545
Mid-Continent	Smith	12- 8-6	1	40	1	35
Mid-Continent	Wadsworth	26- 8-6	7	1,030	7	1,050
Total Mid-Continent			8	1,070	8	1,085
Pine et al	Pottey	35- 8-6	2	912	2	992
Pine W. B.	Hoyecha	26- 8-6	1	600	0	0
P & R	Chilcoat	25- 8-6	1	985	1	1,080
P & R	Dingan	36- 8-6	2	70	2	95
P & R	House	2- 7-6	4	1,755	4	2,045
Total P & R			7	2,810	7	3,220
Roxana	Smith	1- 7-6	1	8	1	7
Shaffer	Narcome	36- 8-6	1	90	1	95
Sinclair	Cosar	36- 8-6	2	1,570	2	1,620
Snowden et al	Tiger	13- 8-6	1	3,030	1	3,432
Superior	Wadsworth	1- 7-6	1	16	1	13
Texas	Coker	1- 7-6	3	645	3	600
Tidal	House	1- 7-6	3	1,015	3	1,075
Tidal	Johnson	1- 7-6	1	60	1	60
Total Tidal			4	1,075	4	1,135
TOTAL LITTLE RIVER					103	40,960

EARLSBORO

Amerada	Anderson	15- 9-5	2	1,260	2	1,245
Amerada	Cowden	4- 9-5	8	1,730	8	1,835
Amerada	Rodgers	3- 9-5	2	1,045	2	785
Total Amerada			12	4,035	12	3,865
Atlantic et al	Foreman	18- 9-5	1	184	1	175
Barnsdall	Brown	10- 9-5	4	1,846	4	1,973
Barnsdall	Bruner	2- 9-5	2	860	2	877
Barnsdall	Bruner-M	11- 9-5	4	1,649	4	1,599
Barnsdall	Cudjo	11- 9-5	1	27	1	30
Barnsdall	Davis	11- 9-5	3	867	3	776
Barnsdall	Davis-J	11- 9-5	4	559	4	676
Barnsdall	Davis-M	11- 9-5	3	99	3	115
Barnsdall	Gibson	9- 9-5	8	3,462	8	3,582
Barnsdall	Hearn	15- 9-5	1	6	1	5
Barnsdall	Ingram	4- 9-5	8	3,533	7	3,137
Barnsdall	Pack	10- 9-5	4	265	4	246
Barnsdall	Peter	10- 9-5	4	272	4	295
Barnsdall	Sango	2- 9-5	3	6,752	3	6,898
Barnsdall	Sebolka	15- 9-5	1	597	1	592
Barnsdall	Sullivan	10- 9-5	3	88	2	58
Barnsdall	Watsutke	12- 9-5	4	1,876	4	1,712
Total Barnsdall			57	22,758	55	22,521
Carter	Davis	13- 9-5	2	570	2	590
Carter	Payne	12- 9-5	3	120	3	130
Carter	Sango	2- 9-5	4	2,390	4	2,865
Total Carter			9	3,080	9	3,585
Continental	Kays	2- 9-5	2	145	2	210
Continental	Spencer	12- 9-5	4	1,175	4	930
Total Continental			6	1,320	6	1,140
Empire	Barker	12- 9-5	1	1,100	1	1,215
Empire	Edmundson	3- 9-5	3	1,140	3	1,163
Total Empire			4	2,240	4	2,378
Gypsy	Bruner	10- 9-5	4	3,215	4	3,040
Gypsy	Carter	11- 9-5	9	3,272	9	3,267
Gypsy	Earl	16- 9-5	1	20	1	17
Gypsy	Hunick	5- 9-5	1	2,307	1	2,270
Gypsy	Noble	12- 9-5	4	3,487	4	3,867
Gypsy	Peter	10- 9-5	3	180	3	192
Gypsy	Sango	1- 9-5	5	4,812	5	3,910
Gypsy	State	16- 9-5	4	1,167	4	1,350
Total Gypsy			32	18,460	32	17,913
Independent	Bruner	10- 9-5	4	332	4	270
Indep.	Gaines	11- 9-5	4	1,285	4	1,245
Indep.	Knapp	8- 9-5	4	2,323	4	2,075
Indep.	Sullivan	10- 9-5	3	123	3	192
Total Independent			15	4,063	15	3,782
Magnolia	Bryant	9- 9-5	6	1,985	6	1,923
Magnolia	Cowden	4- 9-5	4	80	4	80
Magnolia	Dixon	12- 9-5	1	0	1	28

(*Continued on Page 43*)

Seminole District Production by Companies and Leases, March 28 and March 21, 1928

(*Continued from Page 42*)

Company	Farm	S.T.R.	Mar 28th Wells	Mar 28th Prod.	March 21st Wells	March 21st Prod.
Magnolia	Edmundson	3- 9-5	3	30	3	30
Magnolia	Holmsley	11- 9-5	8	1,616	8	2,174
Magnolia	Ingram	10- 9-5	1	30	1	30
Magnolia	Lena	10- 9-5	3	80	3	80
Magnolia	Seay	12- 9-5	9	3,966	9	4,098
Magnolia	Simpson	10- 9-5	3	306	3	317
Magnolia	Sparks	11- 9-5	7	991	7	1,356
Magnolia	Sullivan	12- 9-5	3	109	3	247
Total Magnolia			48	9,193	48	10,363
Mid-Cont	McCumber	9- 9-5	7	400	7	345
Mid-Kansas	Anderson	14- 9-5	3	80	3	125
Phillips	Dunnaway	15- 9-5	1	30	1	30
Phillips	Graham	9- 9-5	4	105	4	257
Total Phillips			5	135	5	287
Prairie	Baker	23- 9-5	1	50	1	50
Prairie	Davis	13- 9-5	5	3,820	5	3,950
Prairie	Graham	3- 9-5	2	25	2	35
Prairie	Graham-O	10- 9-5	4	1,475	4	1,845
Prairie	Stidham	11- 9-5	13	4,720	13	4,655
Total Prairie			25	10,090	25	10,535
Roxana	Bayliss	17- 9-5	1	17	1	14
Roxana	Spencer	12- 9-5	2	1,889	2	1,948
Total Roxana			3	1,906	3	1,962
Shaffer	Clark	1- 9-5	6	953	6	1,031
Sinclair	Foreman	18- 9-5	1	15	1	15
Sinclair	Hollins	12- 9-5	2	90	2	140
Sinclair	Sango	2- 9-5	3	4,535	2	4,010
Total Sinclair			6	4,640	5	4,165
Skelly	Spencer	12- 9-5	1	667	1	680
Texas	Anderson	2- 9-5	6	607	6	710
Texas	Brown	10- 9-5	8	2,100	8	2,120
Texas	Rodgers	5- 9-5	4	3,755	4	3,500
Texas	Wilmont	10- 9-5	7	3,462	7	2,302
Total Texas			25	8,924	25	8,632
Tidal	Watkins	9- 9-5	8	2,945	8	3,045
Twin State	Barker	12- 9-5	4	35	4	100
Twin State	Hearn	2- 9-5	4	2,110	4	2,532
Total Twin State			8	2,145	8	2,632
TOTAL EARLSBORO			284	98,278	282	99,161
TOTAL LITTLE RIVER			106	39,799	103	40,960
TOTAL SEARIGHT			71	17,273	71	17,829
TOTAL BOWLEGS			313	79,894	311	81,813
TOTAL SEMINOLE			309	56,090	310	55,746
GRAND TOTAL SEMINOLE AREA			1,083	291,334	1,079	295,509
Avg. per well				269		274

Completions in Oklahoma and Kansas, Week Ended March 31, 1928

OKLAHOMA

Caddo County

Company	Well No.	Location	Depth	Init. Prod.
English Drlg	1	NWc SE 22-6-10 W	T.D. 3540	Dry

Cimarron County

Company	Well No.	Location	Depth	Init. Prod.
Sinclair	1	NEc 22-5-2 E	T.D. 4872	Dry

Creek County

Company	Well No.	Location	Depth	Init. Prod.
Lima et al	1	NWc NE NE 11-14-7 E	T.D. 4020	Dry
Bu-Vi-Bar	1	C SE NE 16-14-7 E	T.D. 1584	Dry
Smith et al	3	NEc SW NW SW 3-17-11 E	T.D. 2360	Dry
Winemiller	2	SWc NE 4-17-11 E	T.D. 1570	Dry
Irelan et al	3	SEc SW SW SW 9-17-11 E	T.D. 2650	Dry
Pennock et al	14	SWc NE 5-16-11 E	T.D. 2755	Dry
Burlingame et al	15	CNL S½ SW NW 13-19-8 E	1555-1564	12
Shaffer et al	1	NEc 16-15-8 E	2840-2915	35
Dixie	2	SWc SE SE 7-19-9 E	2859-2817	321
Roxana	5	NWc NE NE 18-19-9 E	2856-2870	725

Grady County

Company	Well No.	Location	Depth	Init. Prod.
American Drlg	7	C SW SW 23-5-8 W	2020-2500	30M
Meridian	5	NWc NE SE 23-5-8 W	2060-2097	10M
Commerce Dev	2	SWc NE SW 13-4-8 W	2231-2340	12M
Watchorn	1	C SW NE 14-4-8 W	2170-2475 OWD	8M

Kay County

Company	Well No.	Location	Depth	Init. Prod.
Burnham et al	1	SE NE NE 7-27-2 E	550-558	1.9M
Prairie	2	SW NE 19-27-1 W	1865-1870	720&6½M
Black Gold	3	NEc NW NW 10-27-1 W	T.D. 3685	Dry
Sinclair	1	SEc NW 19-27-1 W	T.D. 1900	Dry

Logan County

Company	Well No.	Location	Depth	Init. Prod.
Blackwell	1	NEc SW 28-18-4 W	4200-4256	136
Sinclair	1	SWc NE 28-18-4 W	4040-4060	490

Muskogee County

Company	Well No.	Location	Depth	Init. Prod.
Parks	1	NWc SW NE NW 13-15-19 E	T.D. 1418	Dry
Lambert	1	NEc SW 22-13-15 W	T.D. 2217	Dry

Okfuskee County

Company	Well No.	Location	Depth	Init. Prod.
Atlantic	1	C NW SW 12-10-11 E	T.D. 2740	Dry
Umbrum	2	NWc NE SE 11-10-11 E	2006-2021	150

Okmulgee County

Company	Well No.	Location	Depth	Init. Prod.
Wheeler et al	2	CNL NE 36-14-12 E	1205-1238	¾M
Martin	2	CEL SE NW 3-11-12 E	1550-1925 OWD	½M
Wallace	7	CNL SW SE 14-14-14 E	995-1007	10
Beale et al	11	CEL W½ SE NW 35-15-14 E	T.D. 1625	Dry

Osage County

Company	Well No.	Location	Depth	Init. Prod.
Kennedy	2	SEc SW SW 29-20-12 E	T.D. 2165	Dry
Prairie	2	NWc SW NW 21-27-6 E	2888-2970	1710
Prairie	3	SWc NW 21-27-6 E	2892-2965	710

Pittsburgh County

Company	Well No.	Location	Depth	Init. Prod.
Spelter	1	NEc 21-7-17 E	2505-2620	½M

Pontotoc County

Company	Well No.	Location	Depth	Init. Prod.
Shaffer	7	SWc 9-5-8 E	789-812	25
Shaffer	6	NWc 16-5-8 E	2468-2526	350
Westheimer	1	NE NW SE 19-5-8 E	2657-2695	317
Louisiana	6	NE NW SE 17-4-8 E	T.D. 2981	Dry
Ramsey	3	SWc 20-5-8 E	T.D. 2660	Dry
Marland	1	C SW SE 10-4-4 E	T.D. 2196	Dry

Pottawatomie County

Company	Well No.	Location	Depth	Init. Prod.
Indep.-Darby	1	NE NW SE 14-7-4 E	T.D. 4257	Dry
Magnolia	2	SW SE SE 15-7-4 E	3725-3800	4440
Continental	3	NE SE NW 19-7-4 E	3850-3947	485
Magnolia	1	SWc NW NE 19-7-4 E	3820-3901	347
Gypsy	2	NW SW NE 23-7-4 E	4173-4309	1897
McCullough	1	NW SE 25-7-4 E	4139-4176	2007

Seminole County

Company	Well No.	Location	Depth	Init. Prod.
Empire	1	SW SE 34-10-6 E	4085-4260	1½M
Blackwell	1	SE SW 3-9-8 E	3375-3376	6M
Magnolia	3	NW SE NE 35-8-6 E	4269-4276	400
Carter	8	NE SW NW 36-8-6 E	4384-4404	70
Snowden-McSweeney	1	NWc 13-7-6 E	4315-4324	3657
Independent	1	SW NW NW 23-7-6 E	4323-4329	2844 (9 hr.)
Mid-Continent	1	SE NE NE 14-5-7 E	2618-2622	10M
Louisiana	2	NW NE SW SW 8-5-8 E	2423-2452	180
Prairie	6	NEc SW SE 12-8-6 E	4358-4372	1100
Twin State	3	SE NW 4-9-6 E	T.D. 2445	Dry
Texas	14	NEc NW NE 14-8-6 E	T.D. 4580	Dry
Gardner et al	1	NW SE 36-6-7 E	T.D. 3010	Dry

Stephens County

Company	Well No.	Location	Depth	Init. Prod.
Carter	2	SWc NW NE 32-1-8 W	T.D. 2426	Dry
Magnolia	5	NEc SE NW SW 36-1-5 W	T.D. 1915	Dry
Turman	1	NWc 4-2-8 W	T.D. 2312 OWD	Dry
Smith-Law	1	NEc SW NE 31-1-8 W	1870-1886	200
Magnolia	9	NWc SW NW 20-1-8 W	2264-2280 OWD	15
Pearce-Brown	8	NWc SW SW SE 27-1-8 W	1699-1694	25
Malernee	4	NWc SE NE 34-1-8 W	1658-1663	12
Snodgrass	4	NEc NW 34-1-8 W	1688-1694	70

Texas County

Company	Well No.	Location	Depth	Init. Prod.
The Texas	1	C NE NE 17-3-15 E	2606-2642	7M

Tulsa County

Company	Well No.	Location	Depth	Init. Prod.
Glidden	2	CWL NW SE 15-19-11 E	889-958	½M
Ellen	3	NWc NE NE 25-18-14 E	1268-1302	30
Unger et al	4	CWL NE NE 36-19-11 E	T.D. 2523	Dry

KANSAS

Chautauqua County

Company	Well No.	Location	Depth	Init. Prod.
Griffin-Bell et al	1	SWc NE 1-32-10 E	1965-1984	2M

Cowley County

Company	Well No.	Location	Depth	Init. Prod.
Parker Drlg	1	NEc 30-31-3 E	T.D. 1942	Dry

Greenwood County

Company	Well No.	Location	Depth	Init. Prod.
Empire	1	SEc NE NE 8-25-13 E	T.D. 1581	Dry
Empire	4	NEc SW 30-22-13 E	1738-1767	100
Tidal	2	SWc NW SE 30-22-13 E	1715-1742	80

Marion County

Company	Well No.	Location	Depth	Init. Prod.
Phillips	2	NEc SW NW 23-17-4 E	2339-2385	175

Russell County

Company	Well No.	Location	Depth	Init. Prod.
Mid-West Exp	4	NEc NW NE 5-14-15 W	3061-3108	125

Sumner County

Company	Well No.	Location	Depth	Init. Prod.
Wasson et al	7	SWc SE SW 14-32-2 E	1984-2104	1100
McNabb-Bess	1	NEc SE 22-32-2 E	T.D. 2240	Dry

Completions in N. E. Central, West, Panhandle and North Texas, Week Ended March 31, 1928

NORTH AND EAST CENTRAL TEXAS

Brown County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Phillips	10-Hickman	Benson	1255-1265	45
Cranfill-Reynolds	1-Hill	Mudgett	1299-1305	50
Rosier et al	1-Hill	Mudgett	1304-1305	10
Pandem	5-Hutton	Nobles	1166-1174	40
Pandem	6-Hutton	Nobles	1115-1125	30
Richards	4-Curry	Betts	1098-1115	50
Clark Buffalo	4-Brown Co. Fee Land	Kenney	1085-1088	10
Clark Buffalo	6-Brown Co. Fee Land	Kenney	1084-1093	100
Gillman et al	4-Hickman	Benson	T.D. 1290	Dry
Smith et al	1-Brown	Coffey	T.D. 1300	Dry
Kelsey et al	1-George	H&TB	T.D. 1285	Dry
Richards	3-Hutton	Nobles	T.D. 1167	Dry
Clark Buffalo	5-Brown Co. Fee Land	Kenney	T.D. 1202	Dry
United Royalty	1-Cheatan	Wenters	T.D. 856	Dry
Aldrich	1-Stanley	Smith	T.D. 524	Dry

Callahan County

McCleary et al	1-Wylie	LAL	T.D. 610	Dry
Swoveland et al	1-Hayser	Boal	T.D. 607	Dry
Pardee	2-Alexander	BBB&C	T.D. 1005	Dry
Manhattan	1-Johnson	GH&H	T.D. 1300	Dry

Coleman County

Dallas	1-Wilson	Woolsey	1014-1040	15

Eastland County

Adamson-Bearman	4-Rosenquest	ET	T.D. 1789	Dry
Chestnut-Smith et al	1-Duffer	McLennan	T.D. 3365	Dry
Hoffman	1-Stewart	H&TC	T.D. 3115	Dry

Limestone County

Harrison et al	1-Williams	Varella	T.D. 2964	Dry
Forbes et al	1-Tidwell	Varella	T.D. 3107	Dry

Stephens County

Thompson et al	1-Cook	TP	T.D. 3597	Dry
Texas Consolidated	10-Martin	TE&L	3902-3967	2½M

Young County

Nash-Windfohr	3-Hinson	Pier	2209-2217	7
Nash-Windfohr	4-Henson	Pier	2150-2158	25
Johnson-Dunn	1-Eddleman Bros	Terry	T.D. 2275	Dry

NORTH TEXAS

Archer County

Fain-McGaha et al	3,Wilson	Geraldine	1551-1570	288
Fain-McGaha et al	2-Wilson	Geraldine	1558-1565	200
Johnson et al	3-Wilson	Geraldine	1555-1566	95
Johnson et al	2-Wilson	Geraldine	1551-1564	220
Wilson et al	2-Parrish	Geraldine	1559-1565	86
Continental	60-Gose	ATNCL	T.D. 5280	Dry
Consolidated	1-Wilson	Geraldine	T.D. 1615	Dry
Fain-McGaha et al	4-Wilson	Geraldine	T.D. 1589	Dry
Rinner-Bailey	1-Wilson	ATNCL	T.D. 1650	Dry
Continental-Hines	1-Helm	Mirdecia	T.D. 1563	Dry
Hines-Trout	1-Anderson	Carson	T.D. 1555	Dry

Cooke County

Fain-McGaha	2-Chafin	Reed	981-988	30

Foard County

Clark et al	1-Adkin	H&TC	T.D. 3502	Dry

Montague County

Dickey	1-Ditto	TCSL	T.D. 2300	Dry
Carter et al	3-Bouldin	Chacon	754-778	6M
Spencer-Rhodes	3-Bouldin	Chacon	763-783	7½M

Wichita County

Lewis	1-Siber	Waggoner	T.D. 2716	Dry
Bridwell et al	1-Sparks	Castleman	T.D. 2000	Dry
Hobbs	2-Hodge	KWVFL	T.D. 1543	Dry

Wilbarger County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Boller	1-Waggoner	H&TC	T.D. 2504	Dry
Burton-Humble	1-Waggoner	Purnell	T.D. 2609	Dry
Apple et al	1-Ancel	H&TC	T.D. 1777	Dry
Golding-Cochram	1-Waggoner	H&TC	2376-2390	320
Lawson	2-Waggoner	H&TC	2379-2399	190
Texas	3-Waggoner	H&TC	2374-2385	150
Waggoner	2-Waggoner	H&TC	2391-2425	45

Young County

Kliner-West	1-Langston	TE&L	569-581	61
Shappell	2-Johnson	Sargent	505-524	40
Pennell et al	3-Boone	BBB&C	507-525	160
Allday-Carter	3-McKinley	TE&L	512-534	62
Allday-Carter	4-McKinley	TE&L	512-537	85
Riggs et al	2-McKinley	TE&L	508-522	125
Fisher et al	1-Carter Bros.	TE&L	T.D. 1594	Dry
Panhandle	1-Pittman	Elmore	T.D. 745	Dry
Parker et al	1-Johnson	Sargent	T.D. 670	Dry
Kesler-Logan	1-Knox	Scott	T.D. 810	Dry
Fuller-Morrison	1-Groner	TE&L	T.D. 700	Dry

PANHANDLE

Carson County

Empire	1-Texas Co. Fee	H&GN	2445-2465	48M

Gray County

Empire	1-Bell	I&GN	2610-2665	18M
Gulf Prod	2-Holmes	I&GN	2870-3095	35&25M
Bayshore	1-Bradford	H&GN	T.D. 2696	95M
Delaney et al	3-Jackson	H&GN	T.D. 3020	Dry
Phillips	1-Riley	H&GN	2886-3010	k40
Texas	1-McLarty	ACH&B	2389-2410	305
Delaney et al	6-Jackson	H&GN	2824-2966	2613
St. Clair	1-Crows	H&GN	T.D. 3175	Dry

Hartley County

McKenna et al	1-Capitol Lds	....	T.D. 3635	Dry

WEST TEXAS

Andrews County

Carter et al	1-	PSL	T.D. 5000	Dry
Calvin et al	1-Ratliff et al	PSL	T.D. 4005	Dry

Cooke County

Lipan	1-Rawlings	H&TC	T.D. 2739	Dry

Crane County

Gulf Prod	3-Waddell	....	T.D. 3518	Dry
Crane County Dev.	1-Mosley	H&TC	T.D. 3280	Dry

Crockett County

Simmons et al	1-Halff	I&GN	T.D. 1290	Dry
Humble	2-Sarge	GC&SF	2590-2607	400 (18 hrs.)

Howard County

Magnolia	10-Kelly			
Magnolia	10-Chalk	W&NW	1620-1641	37
Magnolia	5-Roberts	W&NW	2045-2538	30
Coyle-Concord	5-Roberts	W&NW	1841-1866	50
F. H. E.	1-Roberts	W&NW	1313-1326	100
Oleand et al	1-Roberts	W&NW	1881-1900	1½M

Pecos County

Mid-Kans-Transc	16-Yates	I&GN	1168-1235	810 (2¼ Hrs.)

Winkler County

Atlantic et al	1-Hendricks	PSL	2733-2764	4818
Cranfill-Reynolds	1-Hendricks	PSL	2733-2733	12,087
Gulf Prod	10-Hendricks	PSL	2694-2695	4367
Humble	6-Hendricks	PSL	2808-2811	4370
Texon	1-Hendricks	PSL	2863-2987	911
Atlantic	3-Hendricks	PSL	2885-3050	3128
Magnolia	2-Hendricks	PSL	2865-2958	575
Pure	3-Hendricks	PSL	2725-2759	705
Roxana	3-Hendricks	PSL	2740-3027	2651
Murchinson	4-Hendricks	PSL	2945-3087	500
Southern Crude	1-Hendricks	PSL	2897-3023	2184

Completions in North Louisiana and Arkansas, Week Ended March 30, 1928

Louisiana—Webster Parish—Spring Hill

Company	Well	Location	Depth	Yield
C. H. Lyons et al	Munn No. 1	1-22-10	2656	22M gas

Webster Parish—Cotton Valley

Woodley Pet. Co.	Cox B-1	23-21-10	4590	5M gas

Bossier Parish—Cartersville

Palmer Corp.	G. W. Robertson No. 1	26-23-12	3073	150 bbls.

Bossier Parish—Elm Grove

Palmer Corp.	W. H. & C. B. Hodges No. B-9	25-16-12	1905	5M gas

Bossier Parish—Bellevue

Rogers & Jensen	Ledbetter No. 1	7-18-11	1180	salt water, abandoned

Caddo Parish—Vivian

Standish Oil Co.	Jolly No. 1	22-22-15	1048	dry, aband.

Caddo Parish—Pine Island

Dixie Oil Co.	Robertshaw No. 90	14-21-15	3925	50 bbls.
Simplex Oil Corp.	Thomas et al. No. 3	15-20-15	2355	15 bbls.

De Soto Parish—Naborton

Dixie Oil Co.	Jenkins A-1	9-12-11	6149	dry, aband.

Union Parish

Company	Well	Location	Depth	Yield
Moody & Seagraves	Robertson-Downey No. 1	34-22-3E	2150	2M gas

Ouachita Parish

Amalgamated Co.	Cole No. 1	7-19-4E	2175	7M gas

Richland Parish

Moody & Seagraves	Sartor A-1	8-16-6E	2450	52M gas
Oliver et al	M. Hatch No. 1	2-15-5E	2432	12M gas

East Texas—Marion County (Pine Island)

Trimount Pet. Co.	Mebane-Stiles No. 7	N. Gupton HRS	2370	10 bbls.

Waskom—Harrison County

Fuller & Fuller	J. W. Furrh No. 4	J. Short HRS	998	3M gas

Arkansas—Little River County

Greesom et al	Waldrip No. 1	4-13-31	1740	dry, abd.
Grote et al	Allen No. 1	2-13-31	3410	Salt water, abd

Smackover—Union County

Roxana Pet. Co.	Hardy-Murphy No. 2	9-16-15	2325	25 bbls.

Drilling Operations in Oklahoma, Kansas and Texas, Week Ended March 31, 1928

	March 31 Loc.	Rigs	Drg.	S.D.	Week Ended Total	March 24 Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank	1	4	17	..	21	..	4	16	..	20
Other Osage	7	7	14	2	30	4	6	13	3	26
Bristow-Cushing	4	3	38	9	54	2	4	40	10	56
North Oklahoma	8	11	49	42	110	10	7	61	34	112
South Oklahoma	9	16	104	20	149	14	25	125	34	198
Muskogee	..	11	51	23	85	..	13	43	19	75
Okmulgee-Bristow	11	34	72	21	138	11	32	74	23	140
Seminole Dist.	27	40	168	28	263	22	40	140	15	217
Total Oklahoma	66	126	513	145	850	63	131	512	138	844

	March 31 Loc.	Rigs	Drg.	S.D.	Week Ended Total	March 24 Loc.	Rigs	Drg.	S.D.	Total
KANSAS	32	66	67	131	296	37	69	128	61	295
TEXAS										
Central	..	89	261	147	497	..	94	262	152	508
Panhandle	..	64	94	69	227	..	65	98	67	230
N. Central	..	60	89	32	181	..	58	98	30	186
West	..	114	192	155	461	..	122	205	133	260
Laredo	..	1	25	19	45	..	1	25	19	45
Total Texas	..	328	661	422	1,411	..	340	688	401	1,429
New Mexico	..	9	16	24	49	..	6	18	22	46
GRAND TOTAL	98	529	1,257	722	2,606	100	546	1,346	622	2,614

Judge Veasey Urges Permanent Policy in Producing Oil

TULSA, April 2

URGING that the oil industry attack in a more comprehensive way than it yet has the establishment of a permanent policy of producing oil, James A. Veasey, general counsel of the Carter Oil Co. addressed the Okmulgee District Oil & Gas Association on the evening of March 31. An audience of 200 producers and refiners heard the address.

Mr. Veasey asserted that a demand for regulation of the industry may some time come from the public and that the industry can avert wrong legislation by setting up a policy that will be fair to producer and consumer alike. He said, as he has done on former occasions, that constitutionality of regulatory measures will finally be determined by the supreme court and that that body will give due consideration to the public's side of the question.

Oil associations should begin at once to plan for the establishment of an enduring policy, the speaker said. Measures now being used such as proration and restriction of drilling in certain areas are but temporary expedients, he said, and he asserted that the present situation of huge known reserves is one that will last for years.

E. H. Moore, president of the Independent Oil & Gas Co., was toastmaster of the dinner and addresses were made by J. C. Denton, president of the Oklahoma-Kansas division of the Mid-Continent Oil & Gas Association, Wallace C. Franklin, vice-president of the Tidal Oil Co. among others. Judge Veasey said in part:

"At the outset, I wish it distinctly understood that I am not presuming to offer a panacea for the evils that beset us. Our problem is so complex; there is such divergence of opinion in the industry regarding the measures that should be taken that it would be a bold spirit indeed who would propose anything approaching a concrete plan to alleviate our condition.

"But it is my hope that the things I shall say here will stimulate thought on the part of the members of your association.

"First of all, we must remember that it is the sum total of our operations which result in overproduction. Every factor contributes in some degree to the ultimate result. With this consideration in mind, let us analyze the activities which, when combined, lead to overproduction and in so doing sift the evil from the good. To begin with, we have the owners of settled production from small wells.

"Here, any sort of restraint would not only be unjust but would constitute an economic crime. Secondly, we have those producers who from financial necessity must develop their properties regardless of price and regardless of demand. It is not perceivable how this element can or should be restrained.

"Thirdly, we have the producer not driven by necessity but who owns a property from which he can produce oil whatever the demand and however low the price and continues on his way thinking of the present only, disregarding the future to the partial demoralization of the business.

"By some sort of moral suasion we must change the philosophy of this class of producers, if constructive results are to be obtained. Then, finally, we are the victims of a highly disintegrated industry: Thousands of producers, prompted by different motives, possessed of varying degrees of business intelligence, some practical in their operations, and many of them not, some of them having a prudent regard for the relation of supply and demand and for the current price, and others having no conception of these considerations whatever.

"And what is the result?—an utter absence of cohesion and cooperation in the industry; an utter absence of common design on the part of the units in the business to adapt their drilling and producing activities to the law of supply and demand.

"WE COME now to the two all-important considerations which distinguish us from every other industry in our attempt to meet the problem of overproduction. Here, we stand alone. In the first place, we cannot anticipate the discovery of new pools nor can we anticipate our inability to discover them. If unexpected discoveries materialize we may be confronted with an oversupply despite all our calculations to the contrary. If our wildcat operations fail, we may be in the midst of a condition of under-supply.

"These are conditions so inevitable and so entirely beyond our control that it is difficult if not impossible to formulate a remedy. This brings us to the other circumstance which in my opinion constitutes the essence of our problem: I now refer to the fluid character of our product. If our immediate neighbor or even if an operator in the same pool drills we must drill; if he produces to capacity, we must conform our operations to his.

"Therefore, is it not plain to all of us that new pools at least should be developed and operated under a cooperative plan which will permit the producers therein to adapt their output not only to the demand but to the price.

"In the main, much of what I shall say here has been anticipated. The subject in its present aspect involves two elements:—one practical and one legal. Touching upon the first, it now appears that overproduction in our industry will continue for sometime in the future, especially if the efforts towards stabilization now in progress shall be relaxed. Furthermore, who can venture an opinion in regard to new discoveries which may augment our distress? Accordingly, as an immediate question, the industry should bend itself to a constructive program to equalize supply and demand.

"THIS should be done in any event, but if we stop here, if we but confine ourselves to emergency measures, permanent relief is impossible. Having suffered for more than a year from an acute depression in our business, and with that prospect before us for some time to come, is it not self-evident that our difficulty is basic and fundamental? That we are the victims of an economic maladjustment which calls for a sovereign and permanent remedy and not a purely temporary one?

"In these circumstances, must we not conclude that somehow and in some way we must find the economic principle which, if applied, will put us upon an equality with the other important industries of the country? A principle which will permit us to restrict drilling and to curtail production during periods of overproduction, or even during periods of threatened overproduction; but a principle sufficiently elastic to enable us to speed up our production efforts when the supply is less than the demand?

"If this be the situation in its practical aspect, what then are the legal considerations that bear upon the subject? Obviously, those relating to the constitutional law of our country. If I have a quarrel in this business with anyone advocating the straight-out 'to be let alone' policy, it is with the oil lawyers who dogmatically lay down the doctrine that the oil industry is immune from legislative control in almost every conceivable circumstance, thereby influencing their clients to assume an attitude of resistance toward the progressive policies which the more thoughtful and far-seeing men in the business are advocating.

"The tremendous growth and complexity of present-day American enterprise, the colossal capital invested in our basic industries, large scale production, and similar characteristics of our modern business methods, have brought about or they are rapidly bringing about a complete change in the minds of the economist, the intelligent public official, and, clearly,

of the Supreme Court of the United States.

"The very weight of these considerations with compelling force has brought home the inescapable conclusion that overproduction, business instability, and wide price fluctuations are economic evils, and that they are evidences of maladjustment of our industrial and commercial structure. Our industry peculiarly is the victim of all these things.

"It is impossible for us to find a cure-all. All that we can hope to do is to adopt the measure or measures which will afford us approximate relief. Nor can we, when the technical character, and individual nature of our business are taken into account, bring about a multitude of reforms.

"I maintain that the only thing which in a fair degree will meet our necessities and which at the same time may find general acceptance in the industry itself is a practical plan for the cooperative development and operation of new pools of sufficient elasticity to meet the peculiar conditions of each pool. Any constructive proposal of this character would involve the more economic spacing of wells, the utilization of gas pressure to its highest efficiency, and the power in the operators in the pool collectively to retard or accelerate production, depending upon the current relationship between supply and demand.

"Plainly this necessary reform can be brought about through a general movement for its adoption within the industry itself. By way of suggestion only, I would like to leave these considerations with you, in closing: We may carry through our shut-down agreements in California, West Texas, and in other sections; we may continue the constructive work which has taken place in the Seminole area; we may repeat these practices in other emergencies; but I cannot perceive how we can make distinct progress in solving our fundamental difficulty unless the whole industry in the five or six important oil producing states are brought into agreement upon a plan to avert, as well as to stop, overproduction as a permanent principle for the conduct of our business.

"If these things be conceded, is it not imperative that we set ourselves to this task? As I see it, the machinery is at hand. In these states, we have a number of oil associations, representing every department of our business, and every point of view which should be taken into account in solving the problem. These associations could name representatives to a general conference to consider and agree upon a practice, which, if generally adopted, would in the main meet the question of overproduction, not temporarily but permanently. The material for their consideration has already been assembled.

"I do not pretend that a duty so imposed would be a light or easy one, but I do maintain that it is possible of accomplishment. Intensive, protracted, and, to some extent, unselfish thought on the part of the conference would be indispensable to a correct and practical solution. Assuming that the leaders in the various associations would be chosen, assuming also that they give the subject the necessary time and thought, I feel sure that the true economic principle for the conduct of our business will be found. If this happy circumstance should transpire, I take it for granted that our representatives would have such influence in the industry that the general adoption of their proposal would follow.

"Let us not fortify ourselves in the settled belief that as a constitutional question, drastic statutory regulation of our business is impossible. Let us strive for the modern economic ideal which will in time characterize every large American enterprise,—stable prices rather than prices subject to violent and frequent fluctuation, prices which will give us a living wage and at the same time, fair to the public. The proper degree of cooperation among us will achieve this result."

California Producers Agree to Shut In 39,000 Barrels Daily

By W. E. Green
N. P. N. STAFF WRITER

LOS ANGELES, March 31

THE move to shut in additional crude oil production in California, under discussion the past month, became a reality late this week, when work was underway to close in an additional 39,000 barrels of heavy oil. By April 2, this will bring the total shut in production in California to 121,050 barrels.

These figures do not include 10,800 barrels of daily production at Ventura avenue, which was pinched in some two weeks ago. Neither do the figures include the production being held back at Seal Beach, where the companies are refraining from drilling below the Selover sand.

The plan to reduce the production in California has required much study, investigation and many conferences. The plan has been worked out in complete accord with state authorities. The governor's conservation committee and members of the oil and gas supervisor's department have been in close touch with the progress of the negotiations at all times and they gave final approval to the plan before it was made effective.

Standard Oil Co. and Shell Co. began to shut in wells in Kern county March 29 and these two companies had about completed their part of the movement at the close of the week. Associated Oil Co. started on its part of the program March 30. Other producers taking part in the plan are also busy and the final program, as a whole, will be completed April 3.

The following table shows the fields affected, the total production shut in as of March 1, the program placed into late this week and early next week, with the last column showing total shut in production in state as of night of April 3:

Shut In Production—By Fields

	Mch. 1	Apr. 3*	Total Apr. 3
Kern Co.	8,345	21,000	29,345
Lost Hills Belridge	5,020	.....	5,020
Elk Hills	15,380	.....	15,380
Midway-Sunset	13,125	10,950	24,075
Coalinga	15,535	7,100	22,635
Arroyo Grande (Santa Maria)	30	.....	30
Lompoc (Santa Maria)	1,424	.....	1,424
Santa Maria	5,351	.....	5,351
Ventura Avenue	2,400	.....	2,400
Coyote	2,000	.....	2,000
Fullerton	7,250	.....	7,250
Inglewood	1,100	.....	1,100
Mt. Poso	5,350	.....	5,350
Santa Paula	150	.....	150
Totals	82,460	39,050	121,510

*Date new shut-in completed.
NOTE—Does not include 10,800 barrels pinched in at Ventura Ave.

The spirit of cooperation required among the oil producers of California to put over the shut in movement, was forthcoming as all saw the need for such action. The hardest problem that had to be solved concerned royalty payments. This was settled by the companies agreeing to pay to land owners advance royalties, the books to be balanced when there is no further need to shut in the wells affected.

The shut in plan will continue for five months and longer if need be, but subject to discontinuation at any time after the five-month period on 30 days written notice from any party to the agreement. In some instances entire leases were shut down, and in others certain line wells were permitted to continue on production where there were offset wells not subject to the shut in program.

At Coalinga, Shell Co. for many months had 15,000 barrels production shut in, and in the present movement, the remaining wells, producing 3900 barrels, were closed in.

The decision of the Standard Oil Co., Associated Oil Co. and Marland

Oil Co. not to drill any wells below the Selover sand in the old part of the Seal Beach field for six months also has a real effect on the future production of the state.

It has been estimated that this decision means that 10,000 barrels of daily production will be held back for the period. The Wasem and McGrath sands have been proven for production below the Selover zone, and both sands are capable of producing large amounts of light crude.

The latest shut in program also calls for a slowing down of drilling operations in the areas in Kern county affected by the movement, especially on Kern front, where 21 wells are drilling. Practically all of these will be shut down. Full details of the plans for restriction of drilling operations have not been made known, and probably will not be until latter part of next week.

Gulf Coast Has 34th Field

(*Continued from Page* 41)

prospects the character of acreage control will prevent necessity for competitive development.

Geophysical instruments are used in areas of saline plug intrusions to map the presence of such structures in the subsurface. Once a dome has been found its exploration for oil begins; this work often resulting in the drilling of a dozen, or more, tests to find the spot, or spots, where accumulation has taken place. Hence, the unusual feature of the Humble discovery in the first test drilled.

Although the condition has not been finally proved it is believed the Dewalt producing area is similar to the Orange and Goose Creek fields, where inferred dome structures are so deep-seated that they have never been penetrated by the drill. Because of the great thickness of comparatively recent geological beds found at the surface salt domes are recognized as necessary vehicles for dragging Gulf Coastal formations upward to drillable depths.

Aero Gasoline, Inc., Buys Amboy Service Co.

CLEVELAND, April 2.—The Amboy Service Co., Amboy, O., has been sold to Aero Gasoline, Inc., Erie, Pa. R. H. Sanford remains as manager of the Amboy business for the Aero, but H. P. Sanford will enter the tire business in Conneaut, O. The Sanfords had been in the gasoline and oil marketing business for themselves for seven years.

Aero Gasoline recently bought the Roberts Lock stations in Ashtabula, O., and now owns and operates 15 bulk plants in eastern Ohio and western Pennsylvania. Aero has its own gasoline production and makes motor oils from its own Pennsylvania crude production.

Mexico's New Oil Regulations Meet American Demands

Staff Special

HOUSTON, March 29

NEW petroleum regulations signed by President Calles of Mexico after two months of conferences with the American ambassador, Dwight W. Morrow, are described as having ended a 10 years' controversy over provisions of the Carranza constitution of 1917.

In addition to putting into effect a modified petroleum law passed by the Mexican congress, Dec. 26, 1927, and promulgated Jan. 10, 1928, the new regulations provide:

(1)—Titles legal before May 1, 1917 are confirmed.

(2)—Confirmation is valid in perpetuity, removing 50-year confirmatory titles for rights held prior to 1917, which the United States government considered confiscatory.

(3)—"Positive acts," or physical works on lands, which had been necessary for retention of titles and mineral rights, are defined more liberally.

Under the government system in Mexico the application of law is through presidential decree, which makes the newly promulgated regulations effective in the more liberal interpretations mentioned.

Before passage of the statute amending the petroleum law last December the supreme court at Mexico City, had, on Nov. 17, 1927, held that the limiting of oil company rights to a 50-year period was unconstitutional. President Calles then asked the Mexican congress to modify the law to conform with such decisions.

The Carranza constitution nationalizing petroleum deposits in the subsoil not only provided for 50-year confirmatory concessions to be issued in exchange for previously recognized titles of foreigners but required them to renounce right of appeal to home governments in case of controversies affecting such lands.

Under the new regulations positive acts are defined as drilling, leasing "and in general performing and doing any other positive act or manifesting an intention similar to those heretofore described." Except that oil and coal were not specifically named, not being known at the time of earlier constitutions, the basic laws of Mexico have always recognized other minerals in the subsoil as being nationalized; and the government was required to make grants of such minerals to individuals performing so-called positive acts, in that manner providing for private ownership.

Oil companies never brought into question the right of the Mexico City government to nationalize petroleum and coal, similarly as other minerals had been under federal control, with regard to lands acquired after the effective date of the Carranza constitution, May 1, 1917. Such lands will be governed by provisions of the law which were unchanged at the time the Mexican congress passed its amendments to the statute last December.

Important Reports to be Submitted to Directors

TULSA, April 2.—Two important reports will be made to the board of directors of the Natural Gasoline Association of America at its next meeting on April 10, by the technical committees of the organization.

The gas testing committee which has conducted an exhaustive series of tests in various parts of the field will recommend a standard method for determining the gravity of gas. Tests on this question have been in progress for more than a year.

A report will be made also on a proposed method for making the vapor tension test. For several years the association has been seeking a test method which would be acceptable to the Bureau of Explosives, the manufacturers and the American Petroleum Institute. The association has felt that a method could be found which would be much more satisfactory and accurate than the present standard.

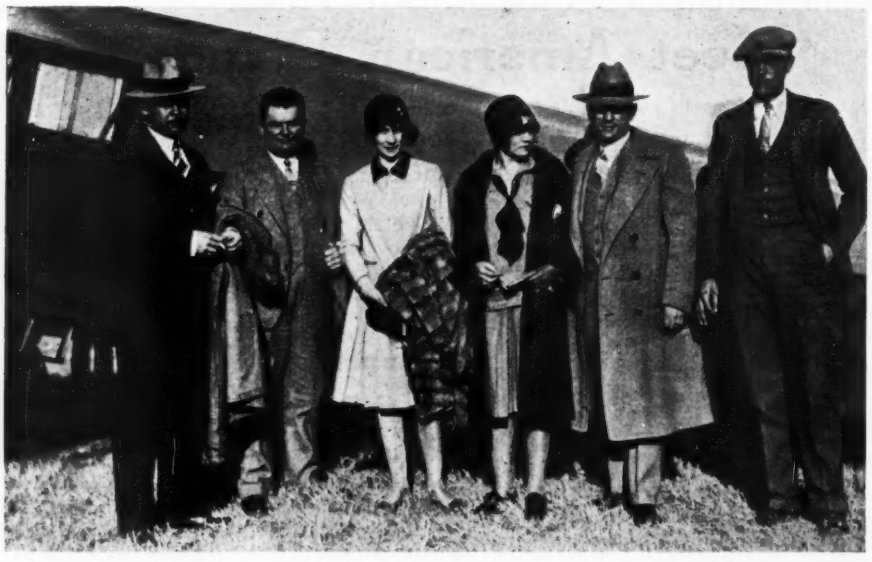
Veteran of Half Century Quits Ohio Standard

CLEVELAND, April 3.—Malcolm G. Vilas, who entered the oil business shortly after John D. Rockefeller did, resigned April 2 as secretary-treasurer of the Standard Oil Co. of Ohio. Mr. Vilas in a few months would have completed 50 years of service with the company. Following the retirement of Mr. Vilas at the meeting of the board of directors, a number of changes were announced.

George A. Burke succeeds Mr. Vilas as a director. Howard G. Jones, formerly assistant treasurer, succeeds him as treasurer and Frank W. Hecker becomes secretary.

A. P. Coombe was re-elected president and W. H. Foster and A. J. Mills vice presidents. Mr. Vilas entered the employ of the company in 1878. He was 71 years old on March 18. In his office is the old horsehair furniture that was once in the office of John D. Rockefeller Sr.

Victor Smith is "Colonel" Now



Victor H. Smith, vice-president of the North American Tank Car Corp., Tulsa headquarters, is one of the most enthusiastic patrons of aviation and only the absence of landing site in front of his home and in the city streets keeps him from selling his car. It is customary to confer titles on flyers who have had more than 10 hours, hence it is from now on "Colonel" Smith. This photograph was taken in Dallas on the occasion of a recent business trip to several Texas points. From left to right: Dr. A. Wade Schwitalla, Roxana Petroleum Corp., Tulsa; T. J. Mullin, American Petroleum Co., Houston; Mrs. Schwitalla, Mrs. Smith and Mr. Smith and Tom B. Parks, pilot.

Merger Rumors Connect Sinclair with Two

CLEVELAND, April 2.—Belief exists in Wall Street that control of Sinclair Consolidated Oil Corp. will soon pass from the hands of Harry F. Sinclair. Recent heavy trading in the stock, which exceeded 850,000 shares last week, has been buying for control, according to New York information.

Both Prairie Oil & Gas Co. and Atlantic Refining Co. have been mentioned as seeking control of Sinclair Consolidated whose properties would benefit either, many observers believe.

Sinclair refineries and marketing facilities would be a benefit to Prairie as an outlet for its large volume of crude oil. Under the Prairie-Sinclair speculation, the plan is to sell Sinclair's half interest in the Sinclair Crude Oil Purchasing Co. and the Sinclair Pipe Line Co. to the Standard Oil Co. of Indiana which owns the other half. Sinclair pipe lines from the Mid-Continent to the Chicago district virtually parallel those of the Prairie Pipe Line Co.

Sinclair has distribution for its products in many of the states east of the Rocky Mountains.

Atlantic Refining Co. is known to want crude oil badly. This crude Sinclair has. Atlantic has a refinery at Brunswick, Ga., which could supply Sinclair and Atlantic Refining stations in the southeastern states. Sinclair's refinery at Mereaux, La., near New Orleans, would be an aid to Atlantic's export business.

Another rumor links the Standard Oil Co. of Indiana with Sinclair but less credence has been placed in the probability of a merger of these two companies than of either Prairie or Atlantic with Sinclair.

12.8% More Gasoline Used In January, 1928

NEW YORK, April 2.—An increase of 50,477,000 gallons or 12.8 per cent, in gasoline consumption took place in January, 1928 over January, 1927, in 35 states having gasoline tax laws or gasoline inspection laws. This was reported by the American Petroleum Institute from reports of wholesalers and dealers. This increase amounts to an average increase of 1,445,000 gallons per state in the one month.

Arizona, Idaho, Arkansas, Wisconsin, Nebraska, the Carolinas showed large gains.

Four states — Florida, Georgia, Michigan and South Dakota showed decreases in consumption as compared with a year ago. Michigan's loss was the largest of the four states in point of gallonage, consumption decreasing 5,005,000 gallons, or 14.64 per cent. Florida's consumption slumped 3,443,000 gallons; Georgia's, 1,500,000 gallons and South Dakota's 300,000 gallons.

Only eight among the 35 states reported increases in gasoline consumption during January as compared with December. The most notable decrease in January was in Ohio, where consumption fell off 8,169,000 gallons as compared with the month preceding.

Gasoline consumption by states in January, 1928, as compared with December and January, 1927 was:

	Tax Per Gallon Cents	MONTH OF Dec., 1927 Gallons	MONTH OF Jan., 1928 Gallons	MONTH OF Jan., 1927 Gallons	% Change Jan. 1928 over Jan. 1927
Alabama	4	12,501,000	11,709,000	9,276,000	+26.23
Arizona	4	4,521,000	4,078,000	2,626,000	+55.29
Arkansas	5	8,216,000	9,249,000	7,156,000	+29.25
Colorado	3	8,972,000	8,997,000	8,157,000	+10.30
Delaware	3	1,946,000	1,567,000	1,179,000	+32.91
District of Columbia	2	4,750,000	4,282,000	3,879,000	+10.39
Florida	5	21,022,000	20,732,000	24,175,000	—14.24
Georgia	4	17,090,000	14,903,000	16,370,000	— 8.96
Idaho	4	2,668,000	2,071,000	1,430,000	+44.82
Iowa	3	19,650,000	20,122,000	16,847,000	+19.44
Kansas	2	19,182,000	19,778,000	16,619,000	+19.01
Kentucky	5	9,354,000	7,488,000	6,103,000	+22.69
Louisiana	2	13,194,000	12,439,000	11,672,000	+ 6.57
Michigan	3	31,340,000	29,175,000	34,180,000	—14.64
Minnesota	2	14,515,000	14,504,000	12,148,000	+19.39
Missouri	2	24,717,000	23,308,000	19,783,000	+17.82
Nebraska	2	12,610,000	13,861,000	10,869,000	+27.53
Nevada	4	930,000	718,000	618,000	+16.18
New Hampshire	4	3,253,000	1,556,000	1,449,000	+ 7.38
New Mexico	5	2,551,000	2,354,000	2,013,000	+16.94
North Carolina	4	20,503,000	20,656,000	16,291,000	+26.79
North Dakota	2	2,290,000	2,522,000	2,276,000	+10.81
Ohio	3	58,036,000	49,867,000	41,631,000	+19.78
Oklahoma	3	21,525,000	19,461,000	16,455,000	+18.27
Oregon	3	9,478,000	7,225,000	6,564,000	+10.07
Rhode Island	2	4,735,000	4,077,000	3,576,000	+14.01
South Carolina	5	9,055,000	8,104,000	6,551,000	+23.71
South Dakota	4	3,841,000	4,898,000	5,135,000	— 4.61
Tennessee	3	12,456,000	10,256,000	9,156,000	+12.01
Texas	3	50,985,000	48,951,000	41,961,000	+16.66
Utah	3½	2,884,000	2,772,000	2,630,000	+ 5.40
Virginia	4½	13,945,000	11,183,000	9,252,000	+20.87
Washington	2	14,983,000	12,189,000	11,205,000	+ 8.78
Wisconsin	2	19,136,000	17,405,000	12,887,000	+35.06
Wyoming	3	1,754,000	1,533,000	1,394,000	+ 9.97
Total	.....	478,588,000	443,990,000	393,513,000	+12.83
Daily Average	.....	15,438,000	14,322 000	12,694,000	+12.83
Increase over prev. yr. Amt.	.....		50,477,000		
Percentage	.....		12.8%		
New Jersey	2	30,165,000	28,550,000		

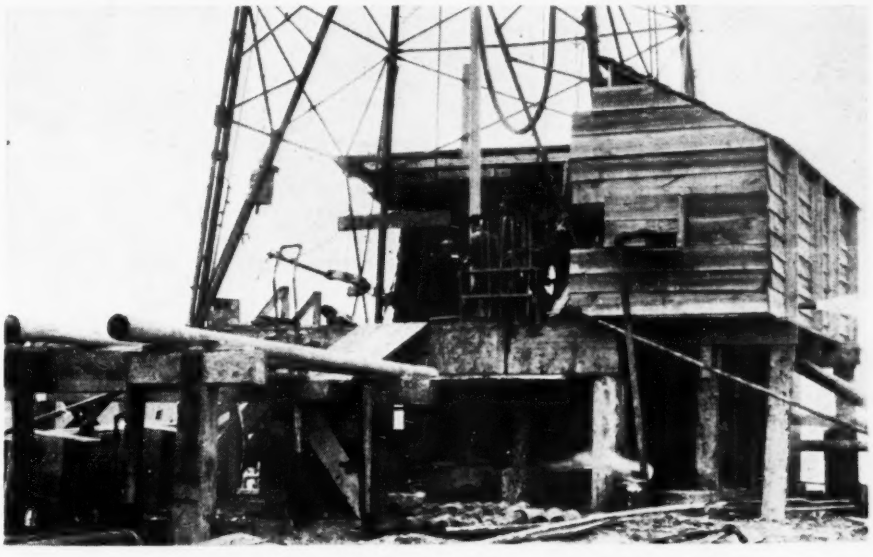
Riverbed Locations of Allen Field Tax Operators' Engineering Skill

By John Power
N. P. N. STAFF WRITER

ALLEN, Okla., March 30 A FLAT sandy waste of land, through which wanders a stream of water the color of a new saddle. On either side low hills covered with black jacks and brush, and more sand through which a car plows resentfully. In places the trees and underbrush are replaced by derricks, and the stillness broken by the clank and rattle of the rotaries.

Such is the scene in part of the Allen field of Pontotoc and Seminole counties, Oklahoma.

The two most interesting wells in the field are inside locations. Usually the interest centers around wells which may prove or disprove additional territory. But here any important wildcat must share the limelight with these two inside wells. Interest in them is aroused because they are inside the boundaries of the South Canadian River, rather than because they are inside a proven area.



The Magnolia well on a sand bar in the river. Allen Field

As oil wells these two holes will probably produce, but as examples of the rig builders' and drillers' arts they are more important. One in particular is the Gilcrease Oil Co. well in the NW NW of Lot 2, Sec. 17, Twp. 5N-8E. This location is over 100 feet from the present bank of the river, and covered with eight feet of water.

The usual difficulties encountered in erecting a derrick over a water covered location were increased here because the amount of water varies constantly, also because there is about 42 feet of quicksand on the river bed. Building the rig took about 60 days, and cost, according to an official of the Gilcrease Oil Co., between $5000 and $6000 more than the same rig erected on dry land. Total cost of the well, which will probably be drilled to a depth of about 2700 feet, is not expected to exceed $30,000.

As a foundation for the derrick, five piles were sunk 43 feet below the surface bed of the river, which put their base about one foot in the bed rock. The piles, 43 inches in diameter, are of rolled iron, filled with concrete.

The iron cylinders were sunk first, the sand and water jetted out with steam, and then the concrete filling put in. The rig timbers rest on four of the five piles, with the derrick floor above the sand bed of the river and 10 feet above the present water level.

The fifth pile is upstream from the others and connected to them by concrete walls, covered with boards, thus forming a triangular point on the upstream side of the rig, and resembling the prow of a ship. It serves the same purpose for it turns the downstream movement of the water and floating sand exactly as the prow of a ship cuts the waves at sea. The drilling engine rests on the triangular platform, upstream from the rig.

The derrick is connected to the shore by a bridge 133 feet long. The drill pipe is "snaked" out to the well on casing trucks, drawn by a winch powered with a Fordson tractor engine. The boilers are on shore, with the steam line laid along the side of the bridge.

The slush pit is also on shore. Instead of the customary outflow ditch a wooden box swung under the bridge brings the mud to the bridge, where it is mixed in the usual manner. The pumps then return it to the well through a mud line laid on top of the bridge.

The casing requirements were unusual for a rotary hole. A 45-foot string of 20-inch was set and cemented through a short wooden conductor. Then 100 feet of 15½-inch was set and cemented clear to the top. Preparations are now being made to set 200 feet of 12½-inch, which will also be cemented all the way. It was thought necessary to use so much surface pipe to combat the moving water and sand. The usual drilling methods of the field will be followed. Eleven-inch rock bits will be used from what would be the grass roots if there were any grass.

Drilling of the well is in charge of J. J. Smyer, a drilling contractor of long experience. The well is not however, a contract job. The Gilcrease Oil Co. itself is drilling the well, using Mr. Smyer's tools. In addition to knowing their rotaries, Mr. Smyer is said to be considering requiring his rough-necks to pass swimming and diving tests in order to prevent any time being lost fishing one of the men out of the river. Fishing jobs of all kinds on this hole are to be limited to whatever catfish may be scouting the well.

The Magnolia Petroleum Co. well in the NW NW of lot 3 Sec. 17, Twp. 5N-8E, a quarter mile south of the Gilcrease well, is set on pilings driven into the sand bed of the river and braced underneath with timbers laid horizontally on the sand. No water covers the location at the present time. The boilers for this rig are set up on the sand bar on which the well is located. The slush pit is not a pit at all, but a built up box, located close to the well.

The Allen field was discovered in January, 1927, when a well drilled by the Homaokla Oil Co. in the NW SW

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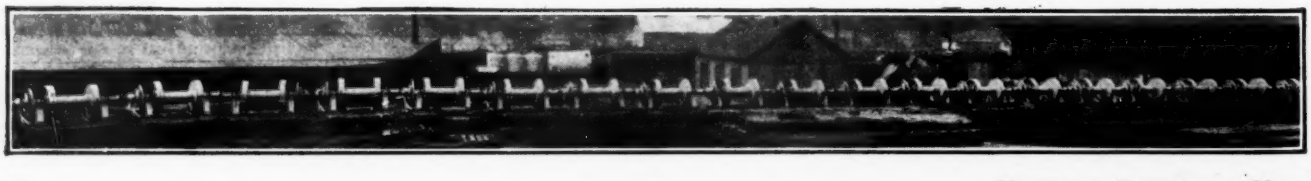


SW of Sec. 16 Twp. 5N-8E made a producer. Since that time the production has steadily increased. At present there are 56 producing wells, with a total daily production of about 10,000 barrels. The Louisiana Oil Refining Co. is the largest producer in the field at this time. This company is producing 3900 barrels daily from 22 wells, the Mid-Continent Petroleum Corp. has 2000 barrels daily from two wells, the Homaokla Oil Co. 1100 barrels daily from 12 wells, Ramsey Bros. have 2000 barrels a day from 17 wells, T. B. Slick, Inc. 30 barrels from one well C. B. Shaffer 300 barrels daily from two wells.

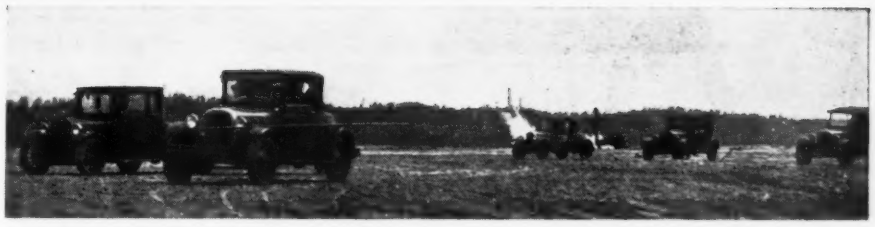
For nearly a year the activity was confined to the south side of the river, but a well drilled by the Louisiana company on the northside of the river opened that area to development. Until recently a well with 500 barrels a day initial production was considered a good well for the territory, but the new well of the Mid-Continent Petroleum Corp. has revised the sights of the local operators upward, as it has been flowing 1500 barrels daily since completion.

The field is served by supply depots of the Seminole field, there being but one small supply station at Ada. Rotary tools are used for drilling. Because of the hard formations encountered the heavy type rigs, 11-inch rock bits and 6-inch drill pipe are used. Eight-inch casing is set on the sand. In some cases the wells are standardized before being drilled in, although some operators do not think that this is necessary, and completions are made with the rotaries.

The oil, most of which is run by the Sinclair Pipe Line Co. ranges from 30 to 34 degrees, A. P. I. There are two producing horizons, one at about 2300-2400 feet, and one at about 2700 feet. The upper sand is in many cases entirely missing. While nearly 100 feet of clay formation is encountered, most of the top part of it is shaley, and produces more gas than oil. It is sometimes necessary to case this upper gas off to allow the wells to flow.

There are now 39 drilling wells in the field and its environs. Of this number, 24 are on the north side of the river and 15 on the south side. The field seems to have been fairly well defined on the southeast and north sides, with the west still open to production. The Mid-Continent Petroleum Corp. has a well in the SE NE of Sec. 14, Twp. 5N-7E, which made 10 million feet of gas and sprayed some oil from the sand at 2618-2622. This well is one and one-half miles west of other production. It is shut in at this time.

Outside of Seminole, the Allen field is the most active area in Oklahoma. The production seems to hold up well, giving little trouble from water except in edge wells. The wells are not expensive to drill, as compared to some localities, from $20,000 to $24,000 being the usual cost. There is a considerable amount of gas in the field, although the initial rock pressures, which are around 350 pounds, fall off very rapidly.



Cars waiting on the south side of the river, which is forded in wagons. Allen Field

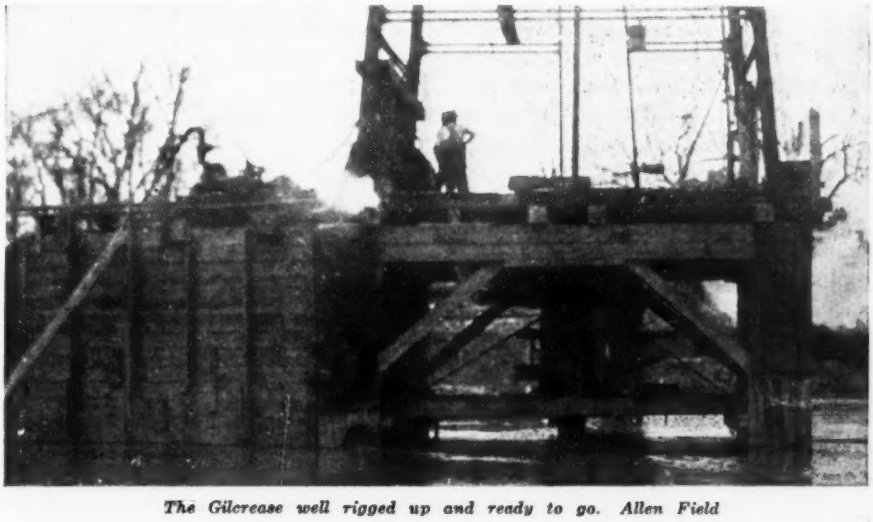
Original production in Twp. 5N-8E was developed several years ago, from lenticular sands found at depths of 800 to 900 feet. Known locally as the Allen sand, this zone lacked continuity and numerous dry holes were drilled on inside locations.

The field now under development, known as the northwest extension, is discussed in a recent publication of the Oklahoma Geological Survey, Bull. 40-S, by R. A. Conkling. In this report, George S. Buchanen, consulting geologist and paleontologist, Tulsa, contributes a note on the producing formation of the extension. He says:

"A study of the samples from the producing horizon in the new field (shows that it) is not the Allen sand, however, but a sandstone that is found at a depth of 2300 or 2400 feet. This sandstone is approximately 100 feet thick and can be quite definitely correlated with the Savanna sandstone, which outcrops to the southeast of Allen, in Coal county, Okla. It is quite likely that this new field is not far from the northwestward limits of Savanna deposition."

As to possibilities for deeper production, the same report says: "As there has not been enough development to the west as yet to show whether this has a large closure in that direction, it is hard to state what the possibilities in the Simpson formation below might be. There are undoubtedly very great possibilities in the lower sands above the Simpson, however, and this structure would be worthy of a Simpson test should closure be found to the west. If this does not produce in the Simpson, the author does not believe there is any very great possibility of future production from this series. There will be many shallow pools developed, no doubt, some of which will have a considerable commercial value, and it is likely that the Hunton will produce over a considerable area. However, the history of the Hunton production is that it is more or less spotted."

Putting down the piles for the derrick for the Gilcrease well. Allen Field



The Gilcrease well rigged up and ready to go. Allen Field

The Editors' Viewpoint

National Petroleum News

Aviation an Opportunity

DESPITE all that has been said and written about the development of the public's interest in aviation, it is doubtful if the average oil man appreciates how fast that interest is growing.

Thereby he may be losing the opportunity to make the public think of his industry and his company at the same time they think of flying.

In Cleveland on a recent pleasant Sunday 25,000 people drove to the local airport, impelled by their curiosity in aviation. Later on this season the manager of the port says visitors Sundays will run far greater in numbers than this.

There are particularly good reasons why the oil marketers' bulk plant is a landmark easily picked out by flyers. Their layout of tanks and buildings is distinctive, and they are to be found along railroad tracks. The head of every marketing plant could well consider adopting the suggestions made by aviators to the Independent Oil Men of America at their recent meeting in Chicago and letter the name of the town on his warehouse roof.

He might also consider whether he could not sponsor the laying out and marking correctly of an emergency landing field in his neighborhood. That field could probably be near his own bulk plant. It would help draw the public's notice to the marketer's own place of business and the part he is playing in helping further the interests of the community.

The need exists for marking towns which are not now on flying routes. Such markings now will guide flyers who may be off their route and lost in the air. Aviation will develop fast as a means of travel. The town and the oil companies which are the first to provide landing and fueling facilities for the air travelers may find business coming to them before they realize it. —V. B. G.

Ain't Gallonage Grand?

DO SPECIAL concessions to get gasoline gallonage pay? Judging from the tactics of some gasoline and oil dealers anything done to increase gasoline gallonage, whether by good merchandising or the giving away of premiums or merchandise, is done profitably. But when reduced to black and white many selling stunts do not stand the accounting test.

Some months ago a Chicago dealer was selling gasoline and motor oil, averaging 10,000 gallons of the former a month. If his motor oil sales averaged the same as the sales of some of the large chain companies he sold an average of 300 gallons of motor oil a month, or 3 per cent of his gasoline gallonage.

He had a 5-cent spread on his gasoline, which was the prevailing spread in Chicago at the time. His gross margin from gasoline was $500 a month. If he bought motor oils in small lots he probably paid 47 cents a gallon, the sales manager of a large refining company has pointed out. That would leave the dealer a gross margin of 53 cents a gallon. Here is how his gross margin for a month would average:

10,000 gallons of gasoline at 5c	$500
300 gallons of motor oil at 53c	159
Total gross margin	$659

Then the dealer got an idea. If he could increase his gasoline gallonage 50 per cent he could get 1 cent more quantity discount. How would he do it? Easy, he would give away a quart of motor oil with each five gallons of gasoline sold. He did this and up went his gasoline gallonage to 15,000 gallons average a month. He got 6 cents a gallon gross margin because of his increased gallonage. His motor oil gifts, however, were one quart to five gallons of gasoline. The volume of motor oil dispensed was one-twentieth or 5 per cent of his gasoline gallonage and he received no cash for it. But by buying in large quantities he may have gotten it for 40 cents a gallon instead of 47 cents as he formerly paid. Here is how his gross margin account stacks up under this plan:

15,000 gallons of gasoline at 6c	$900
750 gallons of oil at 40c given away	300
Gross profit left on gasoline	$600

By increasing his gasoline gallonage 50 per cent and giving away his motor oil, this dealer reduced his gross income $59 a month. This dealer seemed to be kidding himself. He handled more money but he handled less profit. Ain't it grand to have a big gallonage?—R. B. S.

Too Much Secrecy

TOO much secrecy still envelops the oil industry. There was a day when the driller had orders to bodily remove visitors from the immediate vicinity of the drilling wildcat. It was the height of impudence to ask an oil company executive for certain information.

Today, many oil companies are liberal in giving out information. In some instances, they will inform the trade press of full details pertaining to their drilling operations, their marketing policies and the prices they are getting.

Some refiners, though, still conduct their operations behind high barb wire fences. Some operators continue to refuse to give out information as to progress at their wells.

Important operators in California during recent shut down conferences refused all information to the oil

trade press. This agency is very much a part of the oil industry, and renders it real service.

As the result of this attitude, much misinformation reached the public through newspapers. The oil trade press is justly entitled to the confidence of the oil industry and should not be treated as an enemy.—W. E. G.

The Research Program

WESTERN refiners have taken a forward step in undertaking a cooperative research campaign. It is to be hoped that the proposal will meet with adequate financial support and be started without undue delay.

The benefits of such a cooperative undertaking will not be confined to the discoveries which will be reported to the refiners by the scientists they employ. Such undertakings usually result in a better understanding of one another's problems by competitors and are a beneficial influence in minimizing petty jealousies.

The Natural Gasoline Association of America has reaped splendid results from its research program. It has not been long since jobbers demanded gasoline which did not contain "casinghead" from their refiners. Now many jobbers buy natural gasoline direct from manufacturers and make their own blends with refinery gasoline to obtain better volatility.

A research program into methods of combating corrosion at refineries, into methods which will prevent the recurrance of disastrous cracking still explosions and the like are sure to yield big dividends to cooperating refiners, even though the scientists may never find out how to produce a straight-run gasoline which will have the highest possible anti-knock value.—J. C. C.

We're For Mr. Wheeler

SELDOM does the oil industry get credit from the public for the development of highway programs to which it contributes liberally through heavy special taxes.

It is a relief, therefore, to record the position of William T. Wheeler, general manager of the Highway Club of Texas, who says publicly oil contributes more than any other industry toward building and maintenance of roads.

Too many overlook the fact that the oil business is responsible for the wealth that has been created in many counties in Texas, he points out.

"We are too prone to forget that many counties now classed among the wealthiest probably would still be in the mediocre class were it not for petroleum development," he says.

"It is not hard for us to look back a few years and draw a picture of conditions in many sections. There were no highways, school facilities were limited and the farms were poor. Then along came the oil companies with rental money and many farmers leased their land for more than it cost them.

"Then drilling operations and thousands of dollars of outside money were put into circulation, which increased business a hundredfold. Finally came the royalty checks. Thus a comparatively poor section has been converted into a wealthy one, solely through operations of oil companies."

For one, Mr. Wheeler would like to see the petroleum industry given the recognition due it. May his tribe increase.—P. W.

Trading on Scientists' Statements

SOME years ago this paper had occasion to condemn the stock selling statements and claims for the Knox process—alleged to be a means of making gasoline out of heavy oils. At that time the company or its representatives strayed pretty far from the facts. The campaign evidently didn't go over and there was a considerable re-organization within the company, which we hoped was for the better.

The Knox process had dropped entirely from sight and thought until it was brought up recently at a meeting of the Petroleum Division of the American Institute of Mining Engineers at New York. Luis de Florez, consulting engineer of high standing in the oil industry, entered a statement in the records of that meeting disclaiming any knowledge or connection with the Knox process, or its people. Or of having contributed any opinion to them in regard to their process. Or of having given them permission to quote from any statement of his in any way in connection with their process.

It seems in the advertising literature of the Knox interests, they had quoted rather liberally from a paper Mr. de Florez presented at the A. P. I. meeting last December. Then a consulting engineer of their own had undertaken to interpret the Knox process in the light of the quotation from Mr. de Florez.

Even this would have been the end of the matter, but the Knox consulting engineer took offense at the statement of Mr. de Florez and has been after the A. I. M. E. and NATIONAL PETROLEUM NEWS as well for a chance to tell his side of the story, as he calls it, and has offered us considerable material to publish.

However, this Knox engineer overlooks the fundamental error of his position and that is that the Knox people have used liberally from Mr. de Florez' statement in their advertising for the purpose of increasing the sale of their article.

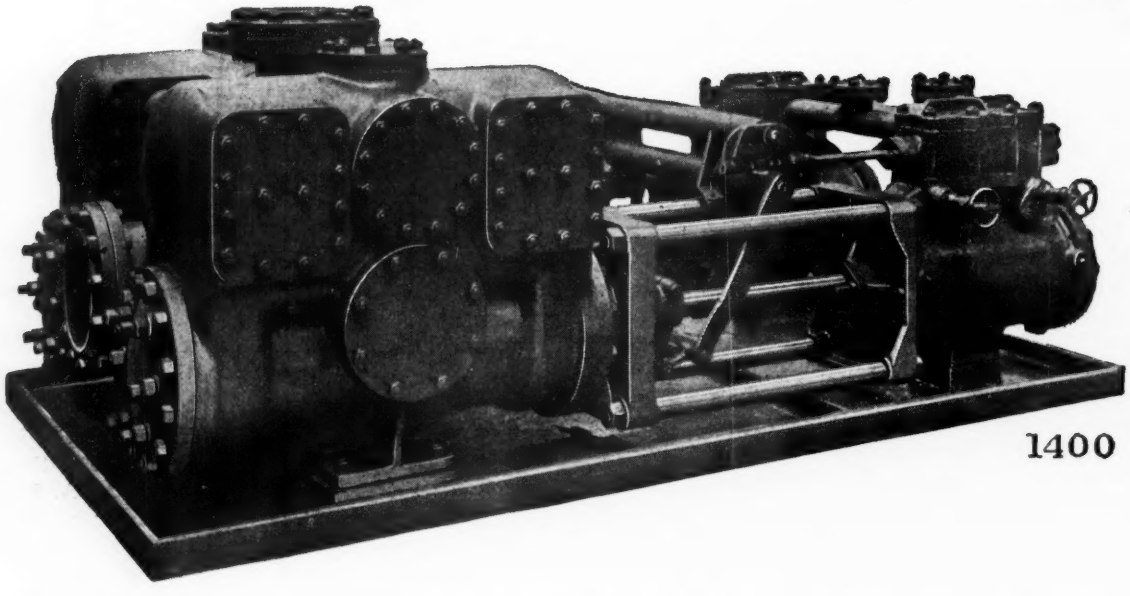
Quoting a man in advertising is entirely different from quoting him in a paper of general publication for the education of everyone concerned. A line should be drawn particularly carefully in regard to professional men and most particularly where stock selling is involved.

A professional man's opinion is his and that of no one else. It is almost literally his property, but under the procedure in this and all other countries, he gives his opinion for the general education of others like himself and for such of the public as can derive benefit therefrom. It is a contribution to the educational literature of the country and of the world. But that does not mean that it can be used to aid the sale of any article in the advertising or the sales work of any company without the permission of the man who is the owner of the opinion or maker of the statements.

The ethics as to this are very clear and distinct. Much harm can be done a man's reputation by the use of his name and any statements of his in advertising, no matter how accurately those statements may be quoted. And by the same token this use of a man's name and his statements can do much harm to the general reading public, especially where stock sales are involved.

The technical and scientific organizations having to do with the oil industry, as well as all other industries, should exert every force at their command to censure and stop this practice and where possible to bring the offender before a court. They cannot take too vigorous an action. Every right thinking business man the country over will support them.—W. C. P.

TRANSIT
Pumping Out Pumps



PUMPING out pumps are used to remove the tar and residual from various types of oil stills. This can be, and oftentimes is, one of the meanest jobs around a refinery. It requires a special pump to do this work successfully.

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Mid-Continent Gasoline Overproduction Now Comes in Summer

By J. C. Chatfield

N. P. N. STAFF WRITER

TULSA, March 30

TENDENCY of refiners in Oklahoma and Kansas recently has been to build up their production of gasoline above normal in the summer and early fall.

The result has been that gasoline prices have been driven below normal in the peak of the consuming season.

This is the conclusion of a study made by the Western Petroleum Refiners Association based on statistical reports compiled by the U. S. Bureau of Mines and the NATIONAL PETROLEUM NEWS.

The past three years' production of gasoline at Oklahoma and Kansas refineries has been below normal approximately half the time. In every year the period of greatest overproduction has been from June to October, the period of heaviest consumption.

In years immediately following the war, refiners ordinarily built up an overproduction of gasoline in the winter and early spring months. Before an accurate gauge had been worked out to guide manufacturers there was a distinct tendency to overrate the increase in gasoline demand which would be experienced later in the season.

Refiners made it a policy to build up stocks of gasoline before summer. If these stocks were not drawn on in early summer it was necessary to curtail runs and dump the surplus.

Since the industry's economists have found it possible to predict total gasoline consumption for a year in advance and since refiners have discovered that heavy stocks of gasoline at the opening of the summer season have been a burden, the tendency has changed.

But overproduction of gasoline has not ceased. On the contrary, the overproduction has been moved up into the middle of the summer. Heavy demands caused the manufacturers to overestimate the requirements of their natural trade territory, or competition of other areas narrowed the normal marketing area and thus cut down actual demands for motor fuels.

The summer overproduction the past three years has not resulted in an increase in stocks of gasoline during the hot season. The overproduction has consisted largely of allowing summer production to come so close to the level of consuming demands that it has been impossible to work inventories down to as low a level as might be desired.

As a result, there has been a subnormal market for two years in Group 3 except for very brief periods. Distributors of gasoline have found it possible to command the lion's share of the margin existing between the cost of crude and the retail price for gasoline.

The marketing committee of the Western Petroleum Refiners association recently presented to members at the annual convention a chart showing the trend of gasoline production and price in Oklahoma and Kansas for the past three years. The chart is reproduced herewith as Fig. 1.

In the upper portion of this chart is shown the actual price of 36 gravity Mid-Continent crude at the well since January, 1925. In the lower part is a line marked 100 per cent which is calculated to show both the normal rate of gasoline production in Oklahoma and Kansas and what is called a normal price for gasoline.

Above and below this normal line are shown the actual rate of manufacture on a percentage basis and the actual spot market price for 58-60 U. S. Motor gasoline on a percentage basis of normal. The actual price is the dotted line and the actual production is the solid line.

To arrive at a normal rate of gasoline production for the two states, production figures of the U. S. Bu-

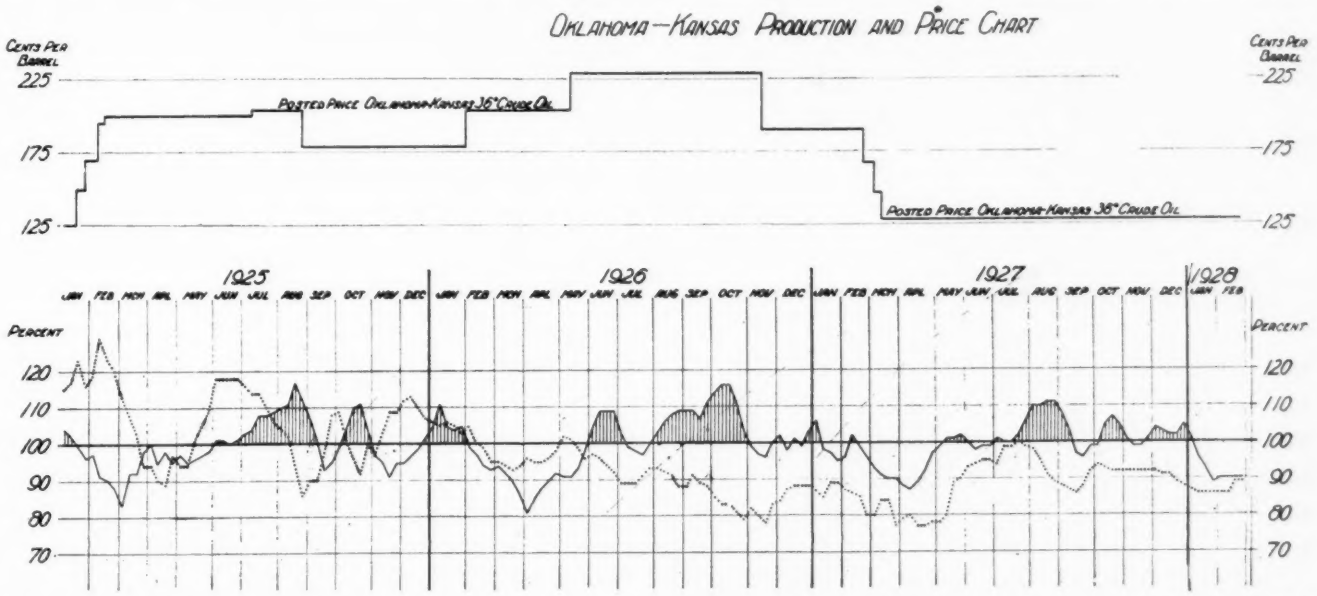


Fig. 1—Chart showing effect on Mid-Continent gasoline price of variations in the rate of gasoline production from normal. The line marked 100 represents both the normal rate of gasoline production at Oklahoma and Kansas refineries and a normal price for gasoline. Solid black line shows the percentage relationship of actual gasoline production at Oklahoma and Kansas refineries reporting weekly to National Petroleum News to the normal rate of gasoline production. Dotted line shows the percentage relationship of the actual spot market for 58-60 U. S. Motor gasoline in Group 3 to the normal price. See text for definition of normal gasoline price

reau of Mines were used, for 1922, 1924, 1925, 1926 and 1927. The year 1923 was omitted in making the averages because of its abnormality.

To arrive at a normal price for gasoline for use on the chart, weight was given both to the retail prices at which gasoline was selling in the average city in the territory of the Standard Oil Co. of Indiana and to the price of crude oil at the well in the Mid-Continent, with necessary expenses for tax and freight considered.

An average retail price for the gasoline factor was obtained by taking the price at 30 cities in Indiana territory, deducting gasoline taxes and freight from Group 3. A simple average was made of the total net prices at the 30 cities.

In Oklahoma and Kansas the average yield of gasoline at refiners is about 50 per cent. With that in mind the crude factor was obtained by taking the cost of two gallons of crude at the well.

With the crude factor established and the gasoline factor obtained, it was assumed that the normal gasoline price would allow both manufacturer and seller a reasonable share of the difference between the two. For purposes of the chart it was determined to give the distributor an arbitrary margin of 5 cents per gallon under the gasoline factor. The difference between the net gasoline cost less 5 cents and the crude cost at the well was divided equally to arrive at a normal price.

The dotted line on the chart shows the percentage relationship of the spot market for U. S. Motor Gasoline to the assumed normal price obtained as described previously.

To plot the actual production of gasoline against normal, figures from the weekly reports of NATIONAL PETROLEUM NEWS were used. To iron out fluctuations, productions for 28 days ending each Friday were used instead of single week reports. The solid line represents the percentage relationship of actual production as reported by NATIONAL PETROLEUM NEWS to a normal rate based on U. S. Bureau of Mines averages for five years.

Study of the chart reveals that the cost of crude does not have an essential bearing on the ability of refiners to obtain a normal share of the margin between crude cost and gasoline selling price. In 1926, for example, refiners obtained a normal price and a low price on relatively cheap crude, and a normal price and a subnormal price on peak crude costs. In 1927 refiners obtained a normal price for gasoline in July, when crude was at its lowest price, and a price well below normal the remainder of the year.

It is interesting to note the immediate effect which above-normal production has on the spot market as shown in the chart. In 1925 gasoline production arose above normal by only about 1 per cent in June and the abrupt rise in gasoline prices was checked instantly. In July, when production was advancing rapidly, the price was dropping just as rapidly and, in September, when production was curtailed there was an immediate reaction in the price.

In 1926, overproduction in January brought the gasoline price below normal and an increase in production in the late spring checked a rise in gasoline prices quickly and effectively. The same was true in the latter part of July and in August, 1927.

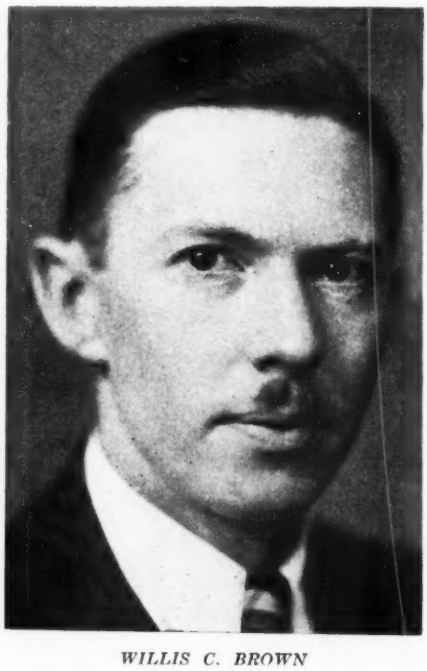
It can be noted that the price of gasoline will react downwards much more quickly and stay down longer from overproduction than it will rise from underproduction. In other words, it is easier to cut a price than raise it.

Perhaps this is so apparent on the chart because the periods of underproduction have come in the spring months when consumption has been slack. A study of the 1925 chart will show there were immediate upward reactions to cuts in production in the summer months.

In 1926 the price responded quickly to a cut in July production but the price never reached normal because production took an upturn too soon. Again in September, 1927, the price turned upwards abruptly when production was cut down and dropped off again the instant production passed above the normal line.

W. C. Brown Becomes President Of Spartan Aircraft Corp.

The Spartan plane, manufactured by the Spartan Aircraft Corp.



WILLIS C. BROWN
President of the Spartan Aircraft Corp.

TULSA, March 29.—Willis C. Brown, Mid-Continent representative of the Foxboro Meter Co., has resigned to become president of the Sparton Aircraft Corp., of which W. G. Skelly, of Skelly Oil, is chairman of the board.

Mr. Brown's first taste of aviation came during the World war. He was with the bureau of aircraft production. He spent much time in flying and instructing.

Flying and airplane design became his hobby. An experimental model which he built attracted much attention from pilots. He was with the Mid-Continent Aircraft Corp. which was re-organized as the Spartan Aircraft Corp.

He was with the Foxboro Co. before and after the war. In 1921 he collaborated with W. B. Hall of the company in publishing a book on oriface meters as a means of measuring natural gas. This book had 4000 copies distributed in the Mid-Continent area alone.

The Gasoline Tank Car Market Explained

One of the worst features of the marginal contract was that it made all in the industry worship the Standard's tank wagon price.

The refiner felt that no matter how much gasoline he made, how much he had in storage, no matter how much he dumped on the open tank car market at any old price, he was still entitled to a certain per cent of that Standard tank wagon price.

And the jobber felt the same way as to his portion too.

It warped the thinking of the whole industry. The refiner couldn't see that he had a market separate and apart from the Standard's tank wagon price.

The refiner could not sell to the jobber's customers, the garage man and the private car owner. He could only sell to the jobber. That jobber could only sell a certain amount of gasoline in his district without cutting the price. When he cut the price he took business away from the Standard, which generally would cause the Standard to cut in turn, so the jobber would not be a great deal better off, although he did have the jump on the Standard companies because of their conservatism in reducing prices.

The refiner's market was solely with the jobber. **If the jobbers, as a whole, could sell only 500 cars of Mid-Continent gasoline in a day then 500 cars was about all they would buy day in and day out.** The jobbers might get a bit optimistic and overbuy but certainly they would not overbuy in the refinery market 100 to 500 cars a day, day after day.

However, the refiner, with his eye constantly on this Standard tank wagon price made all the gasoline he could, stored what he could not sell, and argued with the jobber for "the refiners' share" of that tank wagon price. Obviously, if the refiner was willing to sell jobbers on the open tank car market at a less price than the refiner would contract on, the refiner hadn't a chance in the world to make the old marginal contracts with any jobbers.

Then many refiners went into the station business, built their own distributing outlets in order to get "their share" of this S. O. tank wagon price. But they continued to sell on the open spot market for less than "their share."

This is not written with the idea of finding fault with any branch of the industry for really every one was at fault.

Some Cures That Are Possible

This unsound condition would have been cured and it could be cured today if any one or more of a number of things were done.

IF the refiners were to say that "their share" of the tank wagon price was so much, the same "share" that they get or think they get net to the refinery through their own distributing stations, and would refuse to sell on the open tank car market below that price, the tank car market obviously would come up to that level. However, less gasoline would have to be made, not only by the refiners in Group 3 but by refiners all over the country, including the big Standard companies. Or

IF, the marketers—the jobbers—would say that the open tank car price is their base price, to which they should add freight, inspection, tax and cost of doing business plus profit, and then mark that up as their tank wagon price—or service station price, regardless of what the Standard posted. Or

IF the Standard companies would take the Group 3 and other refinery market open tank car prices as their base price, regardless of what they could make gasoline at their own refineries for, and figure their marketing costs from that price just the way the jobbers might and then mark their tank wagon price at that figure,

THEN the market would come to a sound basis of reasonable, or less, margins all the way around. We say reasonable or less because margins in any business are seldom unreasonably high. Competition takes care of that and makes them oftentimes less than reasonable.

For quite some time the actual markets all along the line have been substantially on this basis, even though the posted tank wagon price has not. Price concessions make the average price "reasonable or less." **But the thinking of the industry, however, is not on that basis yet.**

Long after the Mid-Continent district abandoned the marginal contract with jobbers the East hung to it. However, the marginal contract is just about gone in the East by now.

Abandonment of Marginal Contracts Brought "Market Date of Shipment" Into Use

During the period when the marginal form of contract was being abandoned in the Mid-Continent territory, contracts began to be made with a few jobbers, some exporters and some consumers on certain products, the price to be that published in an oil paper, or several oil papers, as the tank car price for the day or week of shipment.

NATIONAL PETROLEUM NEWS has for a great many years, even while it was a monthly back before the war, shown in each issue its opinion of what the tank car price was in different refining districts. This information was given for the industry's general knowledge. It was not offered as the exact precise figure of the market.

Some of the oil companies with their own distributing stations began to use these NATIONAL PETROLEUM NEWS prices in charging the gasoline and kerosene to their stations. They found it stopped argument on price with the station department. Then a few outside contracts began to be made on them. But everyone recognized that the figures were only offered as a guide to the market, not as an exact hair-splitting determination of what that market actually was.

About four years ago the *Oilgram* was started to distribute every day to the industry whatever hot information was current and incidentally to distribute information on the tank car market. A special organization was set up to gather and handle this price information daily—the first one of its size in the history of the oil industry.

But the *Oilgram* happened to come when the industry was discarding the marginal contract. Before the publishers of the *Oilgram* realized it, the industry had turned to *Oilgram* prices as the basis of literally thousands of contracts. That is, the refiners recognized the tank car price as the basis for dealing with the jobbers and took as the indicator of that tank car price, the prices as shown in the *Oilgram* and NATIONAL PETROLEUM NEWS.

Like everything else in the oil business, this practice did not occur over

THIS is the second installment of the discussion on Tank Car Markets, which has been issued in booklet form by NATIONAL PETROLEUM NEWS *and the* OILGRAM. *Copies have been sent free to all refiners and jobbers. Any who may have been overlooked, we will appreciate their writing us. Or if additional copies of the booklet can be used we will be glad to supply them free of charge.*

—EDITOR.

night but grew rapidly though. It placed a responsibility on the publishers of the *Oilgram* far greater than the *Oilgram* was originally planned to bear. So plans were made and are being carried out to make the *Oilgram* of such a character that it can properly carry that responsibility as long as the industry places it there.

Gathering price information by word of mouth, by telephone calls to buyers and sellers, by looking at quotations here and sales sheets there, and then reaching an "opinion" as to what the price might be, was all right when that opinion was used by the industry as a general guide. But when millions of dollars a week of petroleum products were changing hands on that published price "an opinion" arrived at in that way was not the thing to use, when the actual facts could be obtained.

The publishers of the *Oilgram*, therefore, began to arrange with Mid-Continent refiners first for detailed daily reports as to all their sales on the open tank car market, showing number of cars per each price with full specifications of these products.

In addition the publishers asked that these daily reports each be signed every day by an officer of the company, who thereby asserts that the information therein is the truth, the whole truth and nothing but the truth. Also the publishers asked the right of free access at any time that the publishers might see fit, to all original records that would have any bearing upon the truth or falsity of these statements and the sales on the tank car market.

This was asking a great deal and it was asking for highly confidential material, which, of course, the publishers keep confidential, but the refiners readily agreed to the extent of more than 80 per cent of the refining capacity in Oklahoma and to a lesser per cent in other states at the present time.

The publishers pointed out that so long as the refiners and jobbers used the tank car price for their contracts, it was obviously most necessary to have that price reported as quickly and as accurately as possible. **It can not be reported too accurately.** The publishers pointed out it was impracticable to go to the records of all the many thousands of refinery customers for this information, that the simplest and quickest way was to go to the records of the refiners themselves.

When the industry switches to some other means of arriving at a price in its contracts then the reporting system can be discontinued.

The *Oilgram* has nothing to do with how the refiners and jobbers draw their contracts, if they have contracts; nor has it anything to do with what price basis is put in the contracts; but when the *Oilgram* prices are used in all these thousands of contracts, then it becomes the *Oilgram's* plain duty to its customers to see that every means possible is used to make those prices as accurately reflect the true market as it is humanly possible to do.

S. E. McFARREN

Who was recently elected second vice president of the Ohio Petroleum Marketers Association, Columbus. Mr. McFarren is general manager of C. A. Pierce Oil Co., Akron, O.

The work of developing these daily sales reports has progressed to the point where the publishers of the *Oilgram* offer the reports on Group 3 Oklahoma price to the industry in preference to the prices which have been gathered by it in the past. Getting these reports from Kansas, Texas and Louisiana and Arkansas is progressing to where they may soon be offered the industry also.

The best way of reflecting the basic price condition of a market is with a weighted average price of a much sold commodity.

A weighted average reflects the volume moving at every price, not only the high and low but at all prices in between.

For illustration, say sales were made as follows:

10 cars at 6 cents
5 cars at 5½ cents
1 car at 5 cents

As the capacity of tank cars for contract purposes are all figured alike, at 8,000 gallons each, it is unnecessary to resolve these cars to gallons, so we can go the quick route and say that the 10 cars have a value of 60, the 5 cars a value of 27.50 and the one car a value of 5. Adding the number of cars we have 16 and adding the values we have 92.50. Then dividing the total value by the number of cars we find a weighted average of 5.7812 cents per gallon. If the average of the high and low were taken the average would be 5½ cents.

If the bulk of the sales were at the lower prices, the weighted average would be reversed, for instance, with

1 car at 6 cents
5 cars at 5½ cents
10 cars at 5 cents

the weighted average would be the 16 cars into 82.50 or 5.1562 cents per gallon, against an average of the high and low of 5½ cents.

So the *Oilgram* resolves these price reports into a weighted average, carried to the fourth decimal place on each of the four most used grades of gasoline, including, of course, U. S. Motor.

From this weighted average the publishers of the *Oilgram*, believe the industry can best work, because while it will take into consideration the wide range of the market, it also will fluctuate the least of any price factor.

The *Oilgram* does not undertake to say that this weighted average, or any other figure, is the price that should be named in the contract. The price in any contract is what is agreed to by the parties to that contract. **But what the Oilgram publishers do say is that this weighted average is, in their opinion, the best index to work from.**

In so far as it may be desirable, as well as possible, the collection of daily price reports from sellers will be extended to other groups and other products in the industry.

The extent to which the weighted average and daily report system should be extended to other products and districts will depend upon individual circumstances. Where only a car or so every other day is moving of a given product on the open tank car market, such a system would be of little value; or where the product is made by only one or two refiners, it would not properly, probably, depict "the market." In those instances, at the present time the *Oilgram* shows the prices as "quotations" and, if any, as the result of sales also.

The Oilgram can only record a FACT

It cannot undertake to predict what may happen when buyer and seller get together in negotiation. A market reporting authority can only say that sales of such character were made at such prices; or that sales were not made but that the price asked was so much, or the bid offered so much. A market reporting agency has no way of determining what a person may be able to sell at, or may be able to buy at, because the only way that can be found out is by making the actual sale or purchase.

A reporting agency can only say what has happened, what is a fact, so far as that fact can be accurately discovered and let its subscribers use their own judgment.

Despite everything

gasoline continues the single biggest source of revenue if not of profit for the refiner

Why not take steps to obtain maximum yield? Why be content with 30% to 40% gasoline and 60% fuel oil and coke from ordinary cracking, when Dubbs Units with Flashing System give 50% to 55% gasoline and the remainder is marketable fuel oil and good distillate

Recrack the distillate if you like

True, it takes money to build modern equipment But in the end it takes less than to continue inefficient methods

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Natural Gasoline Maker and Refiner Should Cooperate for Good of Both

By Bernard O'Connor*

Presented before California Natural Gasoline Association, Los Angeles, March 14

OF JUST how much use is casinghead to the refinery operator or manager and what does it accomplish? Can he get along without? Does it raise the cost of the marketable products? Does it offset this raise in the price of the finished product by increasing the yield of naphtha from a given crude? If the yield of a certain product is increased by using casinghead how is this accomplished? Does casinghead increase the quality of a gasoline when blended into the product?

Will cracked gasoline eliminate the use of casinghead for blending purposes? What are the objectionable points of the refinery man as to use of casinghead and how can they be made satisfactory to the refinery? These are only a few of the many questions the refinery man meets in conjunction with using casinghead and with your permission we will try to give you our opinions on each.

1—Of just how much use is casinghead to the refinery operator and what does it accomplish for him?

Casinghead is of major importance on Pacific coast gasolines, at the present time, particularly to refineries confining themselves to straight run operation. Most of the California crudes produce a naphtha which will give the desired 50-90 per cent point and endpoint, but will lack the essential light ends of a good motor fuel. These light ends can be supplied by the blending with casinghead so a marketable gasoline can be obtained which will give low initial and front end for ease in starting and acceleration and enough heavy ends to give mileage and power.

THE point at which mileage and power can be obtained without sacrificing other desired properties of a gasoline is a question of opinion, some technicians maintaining that heavy ends can be utilized by proper compensation of light ends, others maintain that heavy ends can not be compensated by light ends except to a very limited extent. Arguments for each can be made and are logical. Another of the most important uses of casinghead is the increasing of the benzol value of the motor fuel which affects the detonating quality of the product.

This feature is very important from the refiner's standpoint especially in these days of high compression motors. Casinghead also raises the gravity of a motor fuel, how much depending on the amount used.

This has no effect on the quality, but does have considerable effect on the marketability of the product insofar as the public is concerned, and also affects the sales department of any company.

Therefore it may be said that the use of casinghead accomplished the following for the refiner:

1—It raises the gravity so the public is satisfied and allows meeting of sales competition from standpoint of gravity.

2—Furnishes ease in starting and accelerating properties by making easily obtainable the desired initial boiling point and the desired front end of the gasoline.

3—It aids the question of detonation by proper use in the finished gasoline.

4—It will increase yields of naphtha from certain crudes by proper handling, this point to be discussed later in the paper.

2—Can a refiner get along without casinghead? Yes, he can if necessary, although not having it available would be of considerable disadvantage to the refiner.

IF HIS crude is such that he can obtain a naphtha having a desirable light end and desirable heavy end, he can eliminate the necessity of blending. For example, certain crudes like Venture Ave., Santa Fe Springs, Pico and a few others give a desirable boiling point range naphtha and do not actually require a casinghead blend.

If he has available sufficient production of so-called pressure or cracked gasoline to obtain the desired volatility, he can eliminate use of casinghead. This will be covered in detail later.

If the refiner does not object to marketing an inferior product from a volatility standpoint, he can eliminate use of casinghead, or if the public did not demand such a good grade motor fuel on this coast. A fuel on this coast might be considered of poor volatility compared to other competitive fuels, but in the east or Great Lakes district, be considered very desirable.

Therefore, I believe it safe to say that casinghead can be eliminated under certain conditions, but it is not desirable to do so if avoidable.

3—Does casinghead blending raise the cost of a marketable product gasoline?

THIS depends upon the price of the casinghead blended, of course. Usually the casinghead price is considerably above the cost at which treated naphtha from crude can be obtained by refinery operation. Therefore, the marketable gasoline is higher in cost to the refinery if a blend is used.

4—Does it offset this increase in cost prices in any way, and if so, how?

Yes, casinghead does compensate for this increased cost price as follows:

1—It meets desired specifications for the refiner which make the product marketable.

2—It furnishes ease of starting and acceleration properties necessary for a good motor fuel.

3—It will on all crudes allow a slightly increased yield of naphtha by allowing the refiner to go slightly beyond his specifications and bring the finished blended stock back to the desired specification by blending with casinghead.

4—On certain crudes like the Midway crude in the San Joaquin Valley, allow a tremendous increase in naphtha due to the characteristics of this crude. This crude is of such nature, or at least the crudes from this section with which I have had experience, are of such a nature that it is possible to utilize practically all of the normal kerosene distillate cut into the gasoline and still produce a desirable gasoline by the proper utilizing of the casinghead. Some refiners believe in blending the casinghead with the crude before distillation. Others blending with the naphtha after distillation and treatment. It is merely a question of financial balance, which is best suited for the particular company concerned and the crudes involved.

Hence it can be said, I believe, that the increase in cost due to blending with casinghead is justifiable

*Refinery Manager, California Petroleum Corp.

because of certain desirable effects on the gasoline, both in quality and yield.

5—Will cracked gasoline eliminate the use of casinghead for blending purposes?

In our opinion the answer is "No," although it will have some effect on the casinghead situation.

Cracked gasoline does have a low initial and a low 20 per cent boiling point, approximately comparable to a casinghead distillation range. But at

H. R. LINHOFF

Manager of gas department, Richfield Oil Co., recently elected to the Executive Committee of the California Natural Gasoline Association

the 50-90 per cent point, and end-point, the cracked gasoline will more closely approach the boiling range of the straight run naphtha.

Therefore, a blend made from straight run naphtha and cracked gasoline will vary from one made with straight run naphtha and casinghead as follows, the same percentages being used in each case:

(a) Gravity will be lower on the "cracked gasoline" blend.

(b) The initial boiling point of a cracked gasoline blend may be the same but other boiling points up to 50 per cent will be considerably higher.

(c) That it will not allow increased yields of naphtha on certain crudes.

Therefore our opinion is that cracked gasoline will not replace or eliminate the use of casinghead. We do believe, however, it will control the price of this product within certain limits. When casinghead reaches a price that it can be replaced by cracked gasoline allowing for the monetary valve of certain advantages due to blending with casinghead, then the refinery will utilize cracked gasoline for blending stock.

This, of course, depends upon the refiner's position in regard to available cracking apparatus, the competitive gasolines against which he must market and other items which necessarily must pertain to each individual company's problems. It all must work back primarily to the financial analysis of the entire question.

As you all know this oil business must be reduced to the almighty dollar, the question resolving itself into what is the most profitable operation for the oil company, not considering the gasoline department as a unit, or the refinery as a unit, but considering the entire company as a unit.

These are only a few of the outstanding items regarding the use of casinghead by refiners. There are, of course, disadvantages to the refinery department in handling casinghead, such as storage losses, receiving losses either by pipe line or tank car, the limitation of how much casinghead can be properly blended into a given naphtha.

You will realize, of course, that the more of these disadvantages to the refiner that can be eliminated, the more desirable from the refiner's standpoint. This, however, can be carried to an extreme and a casinghead be produced which will satisfy the refiner in all respects and yet work an unwarranted hardship on the natural gasoline department of a company.

There is a happy middle course to be followed which means the most money for the company as a whole. This middle course may have certain objectionable features from a refiner's standpoint, from the gasoline company's standpoint and indirectly, from the sales organization standpoint, but when considered from a view of the entire company is desirable. This is the desirable course to follow, naturally.

STORAGE, receiving and handling losses can be partially corrected by proper refinery operation and design, but not entirely, as the kind of casinghead produced is also of much importance. It is, if course, but common sense that the more stable the natural gasoline received by the refinery, the less the loss, and therefore, better for the refiner.

The amount of casinghead that can be blended into a motor fuel is almost entirely dependent upon the kind of casinghead used for blending. If a casinghead is wild, you can not put in so much, any excess of which will cause gas lock on a motor. If the blend stock is stable, more can be worked into the motor fuel with desirable results and have no trouble with "gas locking."

This is an advantage to the natural gasoline department, in a poor casinghead market especially, as it means this product can be worked out into the motor gasoline at an advantage-

I. B. FUNK

Chairman of the Publications Committee of the California Natural Gasoline Association. He is also president of the Engineering Research & Equipment Co.

ous price perhaps rather than being disposed of as "distress casinghead." It also allows the refiner to work up any excess casinghead he has on hand and eliminate the tremendous losses which must take place if any large amount of this volatile product is stored and also eliminates the additional fire hazard to the refinery as well.

This, I believe, covers to a more or less degree, the relation of casinghead to the refinery operating department. The refiners naturally, in considering the question, will look out for the interests of the refinery department. Likewise the gasoline department head. This, we believe, is wrong and is gradually correcting itself, but only slowly. In order to get the ultimate desired results in the shortest time possible in the matter it is going to mean that the gasoline company or department and the refinery department are going to have to forget their departmental profits and consider the matter entirely from what is best for the entire company.

INSTEAD of one department taking advantage of the other, and one showing an unwarranted profit indirectly at the expense of the other, both have to get together, put their cards on the table and look the matter squarely in the face. In addition, they must take into consideration the problems of marketing encountered by the sales department and give such problems worthy consideration.

After the entire matter is thoroughly balanced and analyzed, the auditing department must submit the financial

analysis of the matter and the most profitable course followed, regardless of what department is affected. Then by all the departments getting behind the matter, cooperating and pulling together, the best results will be obtained at a minimum cost.

I am glad to state here that in our company we have already adopted this method of cooperating and I believe Mr. Hare, Mr. Starr and Mr. Parmelee will verify my statement that this cooperation has meant many dollars to our company. We have already started the cooperation with the sales department mentioned and are beginning to get results far beyond our expectations. We find it most decidedly worth while.

It is going to mean that you of the natural gasoline side of the oil industry will face rigid specifications and must adhere to them or suffer the rightful penalty. It will mean that your departmental profit will shrink perhaps in some cases. It will mean that you will be more or less handicapped by necessarily having to consider the refinery department needs, the effect of certain steps on sales or marketing organization problems. But it will mean more money for the oil companies as a whole, which is of course what is most desirable and what we are all trying to accomplish. So, don't think that the refiners are unreasonable to insist on certain specifications for they are necessarily bound by sales specifications and can not do otherwise.

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Sir Henri Deterding, head of the Royal Dutch-Shell interests and one of the leading world figures in the oil business is shown here with Lady Deterding on the ice at St. Moritz, Switzerland

Mechanical Engineers Name Fuel Research Committee

NEW YORK, April 2

A SPECIAL research committee on fuels with a permanent organization has been formed by the American Society of Mechanical Engineers, 29 West 39th St., New York City.

The membership and officers of the Special Committee, as permanently organized, are as follows:

Chairman, F. R. Wadleigh, consulting engineer, 1 Broadway, New York.

Vice-Chairman, A. C. Fieldner, chief engineer, U. S. Bureau of Mines.

Secretary, Vincent G. Shinkle, consulting Petroleum engineer, 11 Broadway, New York.

W. H. Blauvelt, consulting engineer.

S. B. Flagg, fuel engineer, Electric Bond & Share Co.

W. H. Fulweiler, chemical engineer, The U. G. I. Contracting Co.

Prof. R. T. Haslam, technical adviser, Standard Oil Development Co.

J. H. McNally, fuel engineer, Pardee Brothers & Co., Inc.

W. L. Robinson, superintendent, fuel and locomotive performance, Baltimore & Ohio Railroad Co.

Dr. Walter Runge, International Combustion Engineering Corp.

Prof. W. Trinks, College of Engineering, Carnegie Institute of Technology.

Prof. W. J. Wohlenberg, associate professor of mechanical engineering, Sheffield Scientific School, Yale University.

Dr. H. C. Porter, consulting chemical engineer.

The purpose of the committee's work is thus outlined in the prospectus sent out:

"As preliminary to organizing actual research work, the committee at its first meeting, recognizing the necessity for, and value of obtaining exact and definite knowledge regarding research work now being carried on or planned, decided to assign to each member the work of securing the desired information regarding his particular field, as included in the broad, general subjects for research determined upon. The tentative assignment of members to specific subjects is as follows:

1—The Constitution of Coal, A. C. Fieldner.

2—High Temperature Carbonization of Coal, W. H. Blauvelt.

3—Low Temperature Carbonization of Coal, Dr. Walter Runge.

4—Complete Gasification of Coal, W. H. Fulweiler.

5—Other Methods of Processing Coal, Dr. H. C. Porter.

6—Combustion in Domestic Furnaces (all fuels), J. H. McNally-F. R. Wadleigh.

7—Combustion in Central Power Stations (all fuels), S. B. Flagg-W. J. Wohlenberg.

8—Combustion in Locomotive Furnaces (all fuels), W. L. Robinson.

9—Combustion in Metallurgical and Industrial Furnaces (all fuels), Prof. W. Trinks.

10—Preparation of Coal, J. H. McNally-F. R. Wadleigh.

11—Petroleum Products as Fuel; Processes and Use; their Economic Relationships to Other Fuels, Prof. R. T. Haslam-Vincent G. Shinkle.

"After the available data has been secured, as outlined, the committee purposes to decide upon the actual research activities to be inaugurated with plans for carrying them on and for securing the necessary personnel, funds and facilities.

"At this time, it is desired to bring the whole matter to the attention of all interested in fuels research—producers, users and the technical schools, as well as those concerned with research generally."

The committee desires, according to Chairman Wadleigh, to have the benefit of suggestions and assistance from all who are interested in the subject.

Get Ready for Spring and Summer Business with new, up-to-date HEIL TRUCK TANKS

Heil 1000-gal., 3-compartment oval Tank mounted on 190" WB White chassis. Tank is equipped with special patented Heil Static Eliminators.

ANOTHER one of the big, progressive oil marketers using Heil Truck Tanks is the Sun Oil Co. This firm has Heil Tankers in service in many parts of the country. The ever increasing popularity of Heil Tankers is due to superior Heil design which assures purchasers of "double duty" service and long life. Heil Truck Tanks *advertise* the firms owning them as well as *deliver* their products. Heil prices are low. It will pay you to investigate.

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MILWAUKEE, WISCONSIN

THE HEIL CO.

Manufacturers of
TANKS, BODIES, HOISTS

CLIP THIS COUPON! ***MAIL TODAY!***

The HEIL CO., 1238-50 26th Avenue, Milwaukee, Wis.
We are interested in the tank that will not only deliver our products but advertise them as well.

Size..... ; Number of compartments..... . Please send complete information.

Print Name .....

Firm Name .....

Address .....

Special Equipment Desired.....

Cost Finding Methods for Marketers And How to Use Them

Article 4—Getting Accuracy and Eliminating Needless Detail

By Frank H. Emig

IN the last preceding article we presented an outline for a Chart of Accounts and explained temporarily the reason for it and the function of it in relation to the general accounting system of the business. As previously stated the accounts are divided into four major groups: Assets, Liabilities and Net Worth, Income Accounts and Expense Accounts. However, these groups can be subdivided into as many different classifications as is expedient for the individual business or for the data desired by the management to be served.

To avoid the necessity for an account in the general ledger for each fixed asset item, each liability or each detailed classification of expense for every activity of the business, these major groups and the various accounts in each group items or transactions of similar nature are gathered into one total. This total is termed a Controlling Account.

In case detailed information is necessary, as in such accounts as Accounts Receivable, Accounts Payable, etc., subsidiary accounts or ledgers are kept which itemize in detail under some form or arrangement the amounts covered by these Controlling Accounts. For example, Accounts Receivable controlling account shows a total outstanding due the

Fig. 8— COMBINED CASH BOOK-JOURNAL-INVOICE AND CHECK REGISTER

FIXED ASSET ACCTS. AND OTHER GENERAL LEDGER		ACCT. 31 ACCOUNTS PAYABLE		ACCT. No. 3 ACCOUNTS RECEIVABLE					ACCT. No. 2 CASH	
DEBIT	CREDIT	DEBIT	CREDIT	DEBIT	CREDIT	INT	INVOICE NUMBERS	DESCRIPTION	DEBIT	CREDIT
								AMOUNT BROUGHT FORWARD		
			56077			1	546	A.B.C. Refining Co. ABC4 gor		
			24033			1	547	Penn. R.R. Co. 3rd ABC4 gor		
						15		Cash deposited		9585
	10000					18		John Jones note Paid & Int.	10350	
		56077				10		A.B.C. Refining Co.		
						12		A. Schumann		
						"		A.R. Jones		
						"		Jeff Smith		
				10000		"		Harry Jackson	10000	
						13		Cash deposited		20350
						15		" "		13000
						"		A.R. Johnson		
								Monthly closing entries for Sales, Cost of Goods Sold, etc.		
	13900			3600	850 31			Each Plant Summary of Sales	13000	
	2100					"		" " " "		
	9000			1200	1200	"		Service Station " "	9585	
	1000					"		" " " "		
	6300					"		Service Station Transfers		
	900					"		" " "		
8000						"		Cost of Goods sold - Wholesale		
6810								" " " - Retail		
3800								" " - Transferred		
	11300							To Each Plant Mdse. (credit)		
	6810							" Service Station Mdse. (credits)		
ITEMS IN THESE COLUMNS MUST BE POSTED INDIVIDUALLY OR SUMMARIZED ACCORDING TO ACCT. NOS.								NOTE:- BALANCE EACH PAGE CARRY TOTALS FORWARD TO END OF THE MONTH, WHEN TOTALS AS SHOWN WILL BALANCE- DEBIT TOTALS EQUAL CREDIT TOTALS- WHEN BALANCED POST AMOUNTS TO GENERAL LEDGER ACCT 31		
$19710	$61810	$56077	$8110	4800	17050			MONTHLY TOTALS	$49935	$49935

Fig. 8. The top side of a page from the combined cash book-journal-invoice and check register. This form is especially suitable for a smaller company

There will be a great demand next winter for *the perfect anti-freeze*

EVEREADY PRESTONE

Trade-mark

(ETHYLENE GLYCOL)

For the preparation of anti-freeze solutions as covered by U. S. Patent 1213368

THOUSANDS of motorists used Eveready Prestone last winter and found it to be the one perfect anti-freeze. Those users and thousands more will buy it at the first approach of cold weather next winter. Be ready for this profitable business with a stock of Eveready Prestone. See your jobber now and get your order in early.

Eveready Prestone is exactly what motorists have long been looking for—a thoroughly dependable anti-freeze that won't boil off, evaporate, become gummy, or leave deposits in the cooling system. It is the only product on the market that meets every specification made by the U. S. Bureau of Standards for "an ideal anti-freeze." It has the endorsement of automobile manufacturers and motor fleet operators, and the many thousands of winter drivers who used it last winter.

One supply of Eveready Prestone lasts the motorist all winter. It proves to be the most economical anti-freeze for every motorist to use because of its permanent protection, its perfect safety and its freedom from harmful effects.

Every car should have the cooling system serviced to guard against mechanical leakage before Eveready Prestone is put in the radiator. Suggest this to your customers as a standard cold weather precaution, like changing transmission grease. It is a safeguard that assures a satisfied customer and means extra business for you.

Get your order for Eveready Prestone in early and be ready for business when consumer advertising brings in customers next winter.

Manufactured for

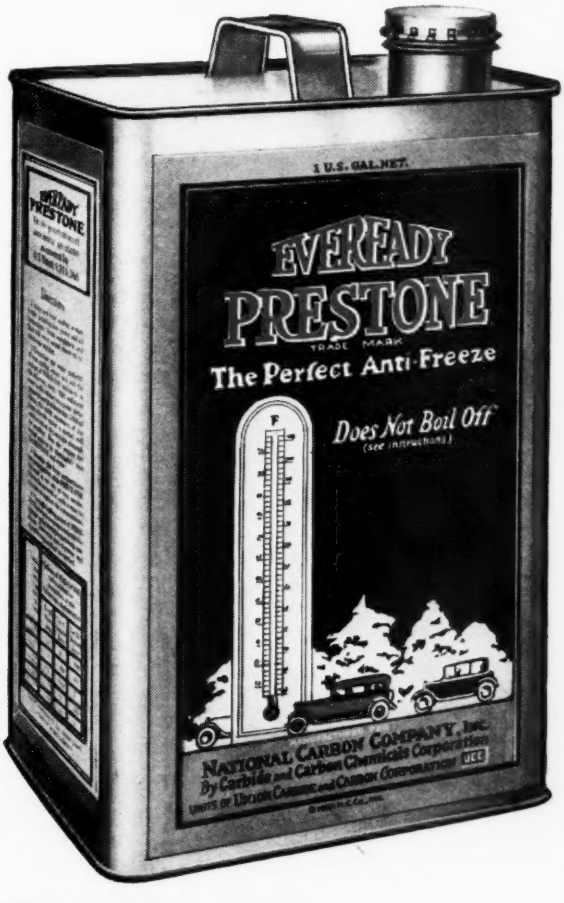
NATIONAL CARBON COMPANY, Inc.

New York — Chicago — San Francisco

Atlanta — Kansas City

By Carbide and Carbon Chemicals Corporation

Units of Union Carbide and Carbon Corporation



concern at the end of a month, $5,000. This amount represents the aggregate amount due from this classification of current assets.

The subsidiary accounts or the detailed Accounts Receivable ledger show the names of the persons or firms from which this aggregate amount is due. By listing all these and the respective amounts they individually owe and totaling such list it should give you the same total as the controlling account shows on the balance sheet.

Too much importance cannot be directed at these subsidiary accounts as compared to the controlling account for each. Many bookkeepers, especially those of smaller companies, do not place sufficient importance on this particular phase of accounting. You nor anyone who will stop to think wants to show a balance sheet or financial statement which if necessary cannot show in detail just what each and every account or classification listed thereon contains or consists of.

Subsidiary accounts should be balanced with their respective controlling accounts each and every month to detect any errors, which inevitably will occur in any system, but which should be corrected as soon as detected.

Did you ever go collecting accounts and have the debtor tell you that the account you present is in error? What did you say? Did you ask to be shown the difference and have almost extreme confidence in your office or did you weaken and without saying much at all feel convinced that the debtor was probably right? Well, if you did, all I can say is that YOU have the wrong slant on things and if you do not have confidence in your office—Get It—one way or another.

The human element in any line of endeavor is susceptible to errors, but these can be reduced to a minimum by close attention to details and balances. I don't know of a single thing which should pride any office bookkeeper, clerk or any employe more than to have confidence in their records for which they are responsible and be able to give to the best of their knowledge and belief accurate information on any matter brought before them.

Consider one moment the effect on any customer if he receives a statement of an account supposedly due a company which to his recollection and information at hand is incorrect. This should be avoided as much as humanly possible, but should an error occur to which your attention be called, DON'T PUT IT OFF ONE MINUTE UNTIL THE CORRECTING ENTRY IS MADE. It may slip your attention and if he gets it again next month he will be hostile.

It has happened that this sort of thing has gone on for months. One executive of an organization has admitted that every time he carried a statement to a customer in order to collect money, he wondered even before he got there what the customer would say and doubted the statement himself. It took just six months of tact and diplomacy to get his cus-

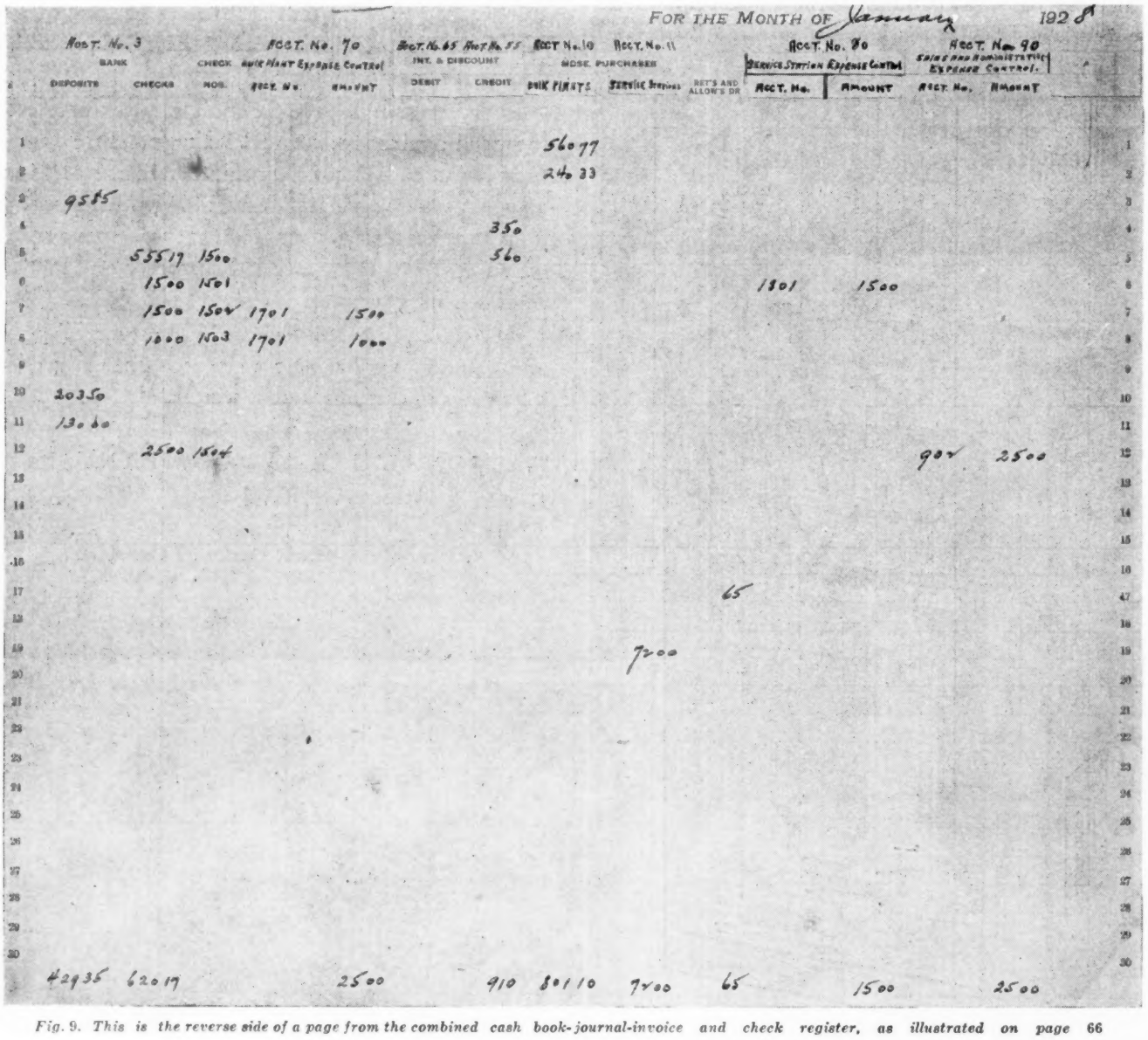


Fig. 9. This is the reverse side of a page from the combined cash book-journal-invoice and check register, as illustrated on page 66

Another Source *of* Profit-

Oil Changing and Greasing are Money Making Operations with the "Sharpsville" All-Steel Pit

THAT complete motor lubrication can easily be made a profitable part of your business has been thoroly demonstrated by owners of "Sharpsville" Drain and Grease Pits.

Because of its moderate price, its many utility and safety features, and its easy installation, the "Sharpsville" Pit combines so many advantages that even the smallest station cannot afford to be without one.

It can be placed in space otherwise unused and there is no additional cost over the price of the pit except the excavating. No concrete work is necessary and the investment is quickly returned from increased sales and profits.

No Lifting--No Turning--No Rack or Ramp

Cars are driven on the pit with perfect ease and safety as it is right on the level with the ground. No need for the driver to leave the car as elevating or turning are unnecessary. There is no lost motion--all makes of cars are serviced with equal facility.

Owners say: "Greatest profit maker in service station equipment."

Send for Special Bulletin

SHARPSVILLE BOILER WORKS CO.
SHARPSVILLE, PA.

Manufacturers of
The Sharmeter

Showing installation of 16' Pit, 5' Deep With Cover.

Shipped Complete in One Unit ~ Ready to Set in Ground

Alliance for Reliance
in
GAS TANKS
FUEL OIL TANKS
SEPTIC TANKS
PAINT KETTLES
SUMP TANKS
AIR RECEIVERS
and for
STACK WORK
and all kinds of plate work, either welded or riveted.

A guarantee on every tank.

Standard sizes always ready.

Engineering service at your command.

Modern factory, modern manufacture, modest prices.

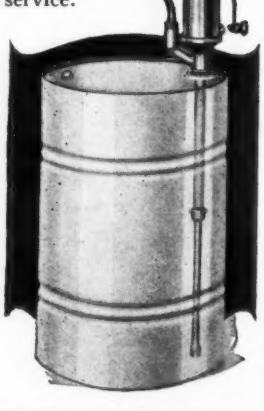
Located on three railroad main lines—double-quick delivery of double-satisfactory
TANKS
Ask for prices

The Alliance Tank Co.

Alliance ALLIANCE THOROWELD TANKS Ohio

Long term economy
is guaranteed by this new G & B Quart Measure Barrel Pump

LOW in price—easy to install—compact and sturdy in construction—adjustable for accuracy in quart measure delivery—threaded for 1½" and 2" openings—fitted with telescopic suction stub and locking device for pump handle—built for quick, uncomplicated operation and long, hard service.



Write for Bulletin T-12 giving detailed information and prices.

GILBERT AND BARKER MANUFACTURING COMPANY
PUMPS AND TANKS FOR THE OIL TRADE
SPRINGFIELD MASS. U.S.A.

tomers into believing his statements were correct as rendered, this executive said.

The same thing is true of your liability accounts, you certainly cannot be guided in the administration of your business if the totals shown on your financial statement are not correct in this respect any more than you can if the money were due you.

The total of all Accounts Payable, Notes Payable, Trade Acceptances or any liability made up of numerous small items of the same nature should have subsidiary accounts showing the creditors' names, the amounts due, the date due, etc. Your accounts payable subsidiary ledger should be balanced monthly with the controlling account the same as explained for accounts receivable.

THE individual accounts after balancing the total with the Control Balance can be balanced or checked separately with the creditors' monthly statements. If they don't agree check the individual items and ascertain immediately what is wrong. Many times invoices for merchandise, if you do not have a stock control, have been omitted from your monthly entries. More often invoices for expense items are omitted only to be entered in a subsequent month thereby throwing off your financial statement and as equally important your monthly Profit and Loss Statement.

There is absolutely no sense to make allowances each month in figures presented as a Profit and Loss Statement for any selling unit for some item omitted from the monthly charge and to make the next month another allowance (these allowances are in your head) because of some charge being made to cover the amount left out the month before. You lose all value of comparison with such slipshod methods and it is advisable to hold your books open at least four or five days after the first of each month to receive any invoices for expenses which may be delayed.

The foregoing does not need to be misconstrued to mean every item positively, as holding accounts open under certain conditions may be not only impossible but impractical. The point is that small items will not affect your figures as much as large ones and a few small items could be omitted if necessary, but you will find that it requires careful attention by every bookkeeper at the end of any month to see that all items and only such items as apply to any one month's business are entered in the records for that month.

What good if any is a Profit and Loss Statement which one month shows a profit of say $2,000 and the next month with comparatively the same volume of sales and the same rate of return shows a loss of $1,000 unless such figures are absolutely true and there is an explainable reason for the difference? In all probability if the facts were known in this case the profit for these months would have been closer to $500 or the net result of the above divided evenly between them.

This argument has been heard as an excuse for this condition, "Well, it will average itself up." Certainly it will, BUT by the time the average is discovered the damage will have been done.

Did it ever occur to you that most expansion is planned, exploration is decided upon, fixed assets are purchased, and in fact all optimistic advances are made in times of seeming prosperity? If such is true, is it not reasonable to assume that something along that line would happen after an executive has received a Profit and Loss statement for the previous month showing a nice profit only to wonder where the payment for it was coming from if next month's statement should show that the averaging process was in effect?

The form shown (Fig. 8 & 9) is a suitable form for all office records especially for a smaller company where one or two persons handle the entries usually contained in a Cash Book, Check Register, Voucher Register, and Journal. This form combines all the necessary information as would be contained in the aforementioned books. Where the work is voluminous or many people are engaged in the keeping of these records it would not do as there would be too much confliction of efforts. Every one would want the book at the same time. You will notice that it would be very convenient for one bookkeeper as there is only one book to work on and also that the entries for all controlling accounts will be found in one place at the end of the month, namely, at the end of each column and on the last page for the month.

THIS is accomplished, you will notice by using these columns for certain controlling accounts previously explained. The details of every entry in these controlling account columns serves for posting the subsidiary accounts, in detail. The totals for all controlling accounts properly posted will give you a balance and a financial statement at the end of the month. It will also give you a Consolidated Profit & Loss Statement for the month, but by posting the subsidiary accounts and balancing such posting with the controls of each you have the necessary information for a detailed Profit & Loss Statement by units the total of which will balance with the profit shown on the consolidated statement.

The points to this are that in the example given where the average profit for two months was said to be around $500, it may be possible that two out of three departments or units of your business are showing profits of $300 and $400 per month, respectively, while the other one is

losing $200, which accounts for the net result. Why then isn't it logical to know this and either correct this loser by reduction of expense, increase of sales, check-up on the service, in fact do something to eliminate or at least reduce this loss, or close the account entirely? Without it you can show by the same figures $700 profit. If you must keep it for various reasons, try to make it at least pay its own keep, until the lease runs out or a prospective buyer appears.

One man told the writer that three of his six stations were making money each month and three were losing half what the other three made. Why didn't he close the three? Well one had a two-year lease to run, which he may renew because a competitor may get it. Another was owned outright and it was good advertising to have it where it was. The other one was on a street which was supposed to have been paved about three years before, but showed no signs of it yet.

Two of these places could have been sold at at least their original cost. The other under reduced operating expenses will pay a part of its own rent until the lease expires. He would be eliminating two losers from the family and derive sufficient money therefrom to put another station in a more advantageous place.

Another instance was where a station was near a railroad siding and with comparatively small expense could be equipped with bulk storage of its own, thereby saving all warehousing, trucking, etc., and which would have turned another loser into a profitable station, but the answer was that the driver was on the payroll anyway, the truck didn't have anything else to do, so it might just as well haul gasoline to this station.

Not enough of the process of elimination is applied to these matters. Doing one thing well at a time is all that is generally expected of the average fellow. Therefore if action were taken on the immediate matter at hand and on the effects of it as the effects occur, it would, no doubt, result in efficiency for all around. The result of an action certainly cannot be corrected before that result is determined.

Conserves Oil From the Market

CLEVELAND, March 30.—Otto M. Donnell, president of the Ohio Oil Co., Findlay, Ohio, believes not only in conservation of petroleum in the ground, but, if it gets on top of the ground, in conserving it against its entry upon the market. He believes in it, even though it hits his own wells. The other day, when he was notified of a new 3000-barrel well in Louisiana, he at once inquired, "What the dickens do you mean by bringing in that well now, when we don't need it?" What the industry needs at present, Mr. Donnell said, is not more wells, nor more oil, but a better market.

PENN EMPIRE

Now
Comes the Test of
Your Business Judgment!

WHILE the oil you sell is in the refineries, in the pipelines, or even in the drums at your dealer's, there is no possible check on its quality. But the moment the last drop is poured into the crankcase of the automobile, the quality of the product . . . and your business judgment in selecting that product . . . are put to the acid test of performance.

The oils you sold yesterday will not go today — they were never formulated to withstand the enormously increased strain imposed on them by modern high compression, high speed motors.

Penn-Empire 100% Pennsylvania Motor Oils are super refined to perform under the exacting standards demanded by 1928 motoring conditions.

"When you buy PENN-EMPIRE you get the best"

EMPIRE
Oil City PENNA.
PENN EMPIRE 100% PURE PENNSYLVANIA OIL
OIL WORKS Inc.

One of the Original members of the PENNSYLVANIA GRADE CRUDE OIL ASSN.
Permit No. 19

Natural Gasoline Industry Must Make New Products, Find New Markets

By Paul Ryan

Article 3

Written Exclusively for National Petroleum News

The Market is Already There

DILIGENCE and hard thinking are all that is necessary to put the natural gasoline business on the way to profitable operation, Paul Ryan shows in this article, the third in a series written for NATIONAL PETROLEUM NEWS. Stable natural gasoline up to now has been the only product recognized as salable that has been made by the natural gasoline manufacturers.

Butane, which has to be removed from the gasoline—all but a very small fraction—to make it stable, was thrown away for the most part. Mr. Ryan, who has been engaged in sales and research work with southwestern natural gasoline manufacturers, points out in his article three ways in which butane may be marketed, as well as the stabilized gasoline—at a profit.

Article 1 in this series appeared on page 17, Jan. 25 issue; No. 2 on page 49, Feb. 1 issue.

IN THE two earlier articles in this series, we discussed the need of the petroleum industry to seek industrial markets and outlets for products which the petroleum industry can make, and we outlined some of the essential economic conditions which must be considered in determining a profitable market for each product.

In this article we shall apply those conditions to some definite products and define possibilities of these markets.

We used as examples products of the natural gasoline industry—completely-stabilized natural gasoline and butane. Besides the 17 economic conditions applicable to a study of the markets, we suggested three methods of handling the natural gasoline containing the butane.

The first method proposed the complete separation of the natural gasoline and butane at the natural gasoline plant in the field and the subsequent shipment of each product directly from the plant to its respective consignee; the second method proposed the shipment of the raw natural gasoline containing the butane to a refinery where the separation of the two products would occur with the subsequent handling of the stabilized natural gasoline at the refinery and the re-shipment of the butane to its proper consignee; the third method proposed the shipment of the raw natural gasoline containing the butane to an industrial plant where separation of the two products would be effected with the subsequent treatment of the butane by the industrial plant, and the re-shipment of the stabilized natural gasoline to its proper consignee.

A Concrete Application

LET us consider the products with these three methods in mind; when the differences in these methods of handling effect any changes in costs, as determined by the suggested economic conditions, these differences will be discussed.

Let us assume that the natural gasoline plant is in Tulsa, that the refinery is in the Chicago district, that the market for the stabilized natural gasoline is in Chicago, that the industrial plant is in Cleveland, and that the market for the butane is in Cleveland.

These points are tentatively chosen merely to give a basis for figuring transportatiion charges; other cities doubtless will occur to the reader as this article develops.

Let us first consider the economic conditions (as listed in the previous article) as they relate to the marketing of the completely-stabilized natural gasoline.

Cost Below 6 Cents a Gallon

I. The cost of manufacturing the raw (incompletely-stabilized) natural gasoline at an efficiently-operated plant should be less than 6 cents per gallon (all charges included). This estimate is predicated on a minimum production of a car (8000 gallons) of natural gasoline daily.

II. The constituents of such raw natural gasoline might be, depending upon the gas, about 25 per cent butane, and the remaining 75 per cent would be the hydrocarbon constituents of stabilized natural gasoline.

III. The cost of rectification should not exceed ¼ cent per gallon.

IV. The cost of handling the natural gasoline and the loss entailed vary from 1/16 of a cent to ¼ of a cent per gallon, depending upon the method used, as outlined above.

V. The type of car for the shipment of the natural gasoline would be Class IV tank car (insulated) or, possibly, Class III tank car (uninsulated).

VI. The cost of a Class IV tank car is approximately $2300; the cost of a Class III tank car is approximately $1600. The depreciation is usually 5 per cent (the A.R.A. allowance is 3 per cent); maintenance and repair charges will add about 5 per cent more. The "railroad-mileage" credit (1½ cents per mile) would considerably reduce these charges.

VII. The freight rates on natural gasoline to the places designated, are as follows:

From Tulsa to Chicago, $0.36 per cwt.

From Tulsa to Cleveland $0.56 per cwt.

From Cleveland to Chicago $0.265 per cwt.

Storage Might Be Necessary

VIII. Storage facilities might be needed for the natural gasoline, depending upon the method used in handling it. The first method would require none in excess of the natural gasoline plant's own requirements; under the second method some would be needed to insure constant operation of the rectifying column against irregular deliveries of the natural gasoline by the railroads; the same condition would apply to the third method.

A standard tank of 10,000 gallons capacity to store such stabilized natural gasoline would cost approximately $1500.

IX. The concentration of the sup-

posed markets is good, i.e., the proportion of the total volume located in one place. This factor will be treated presently for each of the three suggested uses for the stabilized natural gasoline.

X. The total volume of the present markets is small for aviation gasoline, and natural gasoline as a finished motor fuel; the use of natural gasoline for blending purposes is the largest market at present.

XI. The potential volume, when properly developed by advertising and education, is quite large for each of these three uses of natural gasoline. The aviation industry will grow, and will rapidly increase its demands for fuel; the other fuel uses will grow more slowly.

XII. The prices paid for the natural gasoline for each of these uses vary over wide limits. The price for such gasoline in general conforms to a differential over or slightly under similar prices for U. S. Motor gasoline, depending upon its use.

10,000 Airplanes Next Year

AT THE present time, there are approximately 5,000 commercial, military and naval airplanes in the United States. Competent authorities estimate that within the next year, this number will have increased to 10,000. Each of these planes uses from 100 to 400 gallons of motor fuel per month, depending upon the type of plane, the make of motor, the number of motors, climatic conditions, the loads carried, etc.

Assuming an average monthly consumption of 250 gallons per plane, it would mean the existence of a present market volume of over 1,250,000 gallons per month, or 150 cars; it means the prospective volume, by the end of 1928, of 300 cars a month, and constantly increasing.

The concentration of these airplanes follows population and topography. Where the topography of any land adjoining a city allows accessibility to aviation facilities, the city's large population is rapidly increasing the use of the airplane. Chicago has fields for four commercial transport lines and one municipal airport. The number of planes varies, but it can safely be listed as 75. This includes airplanes, registered by the Department of Commerce for interstate flights, and planes unregistered, but available for intrastate flights. These planes would require about 20,000 gallons of gasoline per month now. The increased use of the airplane will mean more planes and more miles per plane, and therefore, more gasoline.

Table 1

Basis: 2 round trips per month—cost per gallon of natural gasoline delivered—Tulsa to Chicago.

	Per gallon
Manufacturing and loading cost of raw natural gasoline	$0.0600
Rectification cost	0.0025
Freight—Tulsa to Chicago	0.0238
Class IV car charges—10% dep., reps. & maint. $2300.00—2 round trips per month	0.0012
Handling charges and loss	0.0006
Total cost of natural gasoline per gal.	0.0881
Less railroad mileage credit	0.0028
Net cost of natural gasoline per gal.	$0.0853

Photo by Underwood & Underwood

JOHN D. ROCKEFELLER

The latest photograph of the founder of Standard Oil taken in his Florida home as he was reading his morning newspaper. Mr. Rockefeller is 88 years old

AVIATION gasoline could be delivered in the Chicago district for $0.0873 per gallon (See Table 1). The present price received for refined aviation gasoline, delivered alongside a bulk station, is usually 5 cents above the corresponding price for U. S. Motor gasoline. Eliminating, for the present, the thought of price-cutting, and assuming that only as much aviation gasoline would be shipped into a territory as that territory could absorb, the possible profit to the shipper of the aviation gasoline would be about 5 cents per gallon.

The market for a superior motor fuel satisfactory for the newer engines of higher compression ratio, and giving excellent performance in cold weather (easy starting and rapid acceleration) is small, but growing rapidly. Inherently, natural gasoline has advantages for this market over the refined gasoline, because the refined gasoline that is antiknock at the higher compression ratios lacks the volatility that allows easy starting and quick acceleration.

More motorists are demanding these superior motor fuels which usually command a premium of 3 cents per gallon over the service station price for U. S. Motor gasoline. Of the total gallonage sold by some distributing companies in the colder climates, over one-quarter represents these high-grade fuels sold at a 3-cent premium. With Chicago's half million automobiles, averaging approximately 500 gallons per car per year, there is represented in that district a market for a quarter of a billion gallons annually, over one-quarter of which could be high-grade, premium fuels.

3 Cents Per Gallon Profit

THIS fuel could be delivered from Tulsa to Chicago, alongside the bulk station for the same price as the aviation gasoline, i.e., $0.0873 per gallon. The possible profit, at present, to the shipper of such gasoline

would be, at least 3 cents per gallon.

The present overproduction of high gravity crude has caused a surplus of refined gasoline. Since the demand of the motorists is now being amply supplied by straight-run gasoline, together with a minimum of cracked gasoline, there is no need to make a deep cut into the crude and obtain lower quality fractions which would later be blended with natural gasoline to yield a satisfactory finished motor fuel.

This condition has greatly lessened the normal proportion of natural gasoline used by refiners, and accounts, in part, for the large surplus and the low prices of natural gasoline.

Two causes, however, will tend principally to correct this condition, namely, a natural decline in the production of high-gravity crude, and the demand of refiners for natural gasoline to blend with their cracked gasoline, to make it suitable for use in engines of higher compression. Almost all of the natural gasoline now consumed is being blended by refiners; the present low prices and large surplus will correct themselves, as these causes make themselves felt.

Loss Under ¼ Cent A Gallon

THE increases in the cost of handling natural gasoline by the second method would be the increased loss due to outage in the transportation of the raw (incompletely stabilized) natural gasoline from the natural gasoline plant in Tulsa to the refinery at Chicago, and the subsequent loss in handling.

This total should not exceed ¼ cent per gallon. The cost per gallon under the second method of delivering natural gasoline to Chicago should not exceed $0.0878 per gallon (See Table 2-a).

Table 2-A

Total delivered cost of natural gasoline—Tulsa to Chicago (See Table 1)	$0.0853
Add loss—outage in transit	0.0025
Total	$0.0878

The increases in the cost of handling the natural gasoline by the third method would be the total cost due to the outage in transit (Tulsa to Cleveland), the losses in handling and the freight on the additional haul of natural gasoline to Cleveland and back to Chicago.

Freight is payable upon the capacity of the car; the cars returning from the industrial plant to Chicago would lack the percentage of butane removed. Theoretically, therefore, each gallon should bear its proportionate part of the freight charge in excess of the actual gallonage in the car. Actually, no cars would be reshipped only three-quarters loaded. The extra freight, it seems, should properly be chargeable to the butane removed, since the natural gasoline is merely a vehicle for the cheaper transportation of the butane.

Wide Market for Butane

The total cost per gallon under the third method of shipping the natural gasoline to Cleveland, removing the butane, and reshipping the gasoline to Chicago, is $0.1185 (See Table 2-b).

Table 2-B

Total delivered cost of natural gasoline—Tulso to Chicago (See Table 1)	$0.0853
Loss—outage in transit	0.0025
Additional freight charge Tulsa to Cleveland, in excess of rate Tulsa to Chicago	0.0132
Freight—Cleveland to Chicago	0.0175
Total	$0.1185

It should be remarked here that if a natural gasoline manufacturer could receive such prices for his product as have been outlined here, he would be quite happy. These articles assume a wide potential market for butane.

In considering the market for the butane, we discussed its use as a fuel. Butane, because of its high heat content, is an excellent gas for fuel.

In the enrichment of artificial gas, however, butane must compete in price with gas oil. The plants of the artificial gas companies through the country are generally equipped to handle gas oil—either alone or in combination with coal—in the manufacture of their gas. The use of butane in place of gas oil would eliminate some of their investment now tied up in equipment to handle the gas oil-pumps, heaters, atomizers, scrubbers, etc.—which would be unnecessary when handling the gaseous butane.

In future plants this saving could be effected; in plants already constructed, the use of butane would need to show sound reasons why the use of this equipment should be discontinued.

Butane versus Gas Oil

BUTANE, to replace gas oil for gas enrichment, must suffer a further reduction in price; it must compensate for the elimination of profits which come from the sale of the tars and resins which are obtained as the residue from the gas oil, when it is heated.

These resins constitute about 25 per cent of the charge of gas oil; they are used as road oils; their profit is considerable and must be allowed for. Uncondensable refinery gases can be sold on such a basis and piped to a convenient gas plant nearby; some refineries are selling their gases for 35 cents per 1,000 cubic feet of gas—under standard conditions—having a heat content of approximately 1,500 B.t.u. per cubic foot.

Butane has a heat content of approximately 3,200 B.t.u. per cubic foot, so that a cubic foot of butane would have twice the heating value of the refinery gases. The price for butane, therefore, could be double the price of the refinery gases.

Obviously, butane, however, whose vapor occupies about 32 cubic feet per gallon of liquid, could not be profitably sold even on such a basis of 1,000 cubic feet for 70 cents, when even the present low prices of butane as a fraction of natural gasoline would yield $1.50 for such an amount of vapor.

Butane in Cylinders

BUTANE can be profitably used as fuel, however, in small cylinders for domestic use in those communities where artificial or natural gas is not available. Since butane boils at plus 32 degrees Fahr., it would be necessary to add some propane, which boils at minus 49 degrees Fahr., to lower the boiling point of the gases for satisfactory use in cold climates.

This could be arranged by the natural gasoline manufacturer—since almost all raw natural gasoline contains appreciable amounts of propane—and the mixture could be compressed to liquid form and shipped in tank cars or in carload lots of large cylinders to a local distributor for transfer to smaller cylinders.

This liquid would vaporize as the pressure was released, and each small cylinder—approximately 4 feet high and 1½ feet in diameter—would yield when mixed with air, an amount of gas equal to approximately 5,000 cubic feet or ordinary artificial gas as used in cities, having a heat content of about 500 B.t.u. per cubic foot. The gas in the two small cylinders and a cabinet and some necessary piping sell for approximately $150.

A Potentially Profitable Business

THIS should prove a profitable enterprise for local distributors in small towns and farming districts. The small cylinders for household use can be bought for about $20 apiece; the balance of the fittings should not cost over $75. The liquefied mixed gases—propane and butane—could be delivered to the distributor in Cleveland (not that Cleveland is either a small town or in the farming district, but it serves to make our analogy complete) by the natural gasoline manufacturer at a cost of $0.0359 per pound (See Table 3), or $3.59 for the gas necessary in each cylinder, since each cylinder holds 100 pounds of liquid, at high pressures.

Table 3

BASIS: Butane—Cylinders in carload shipments—Tulsa to Cleveland.

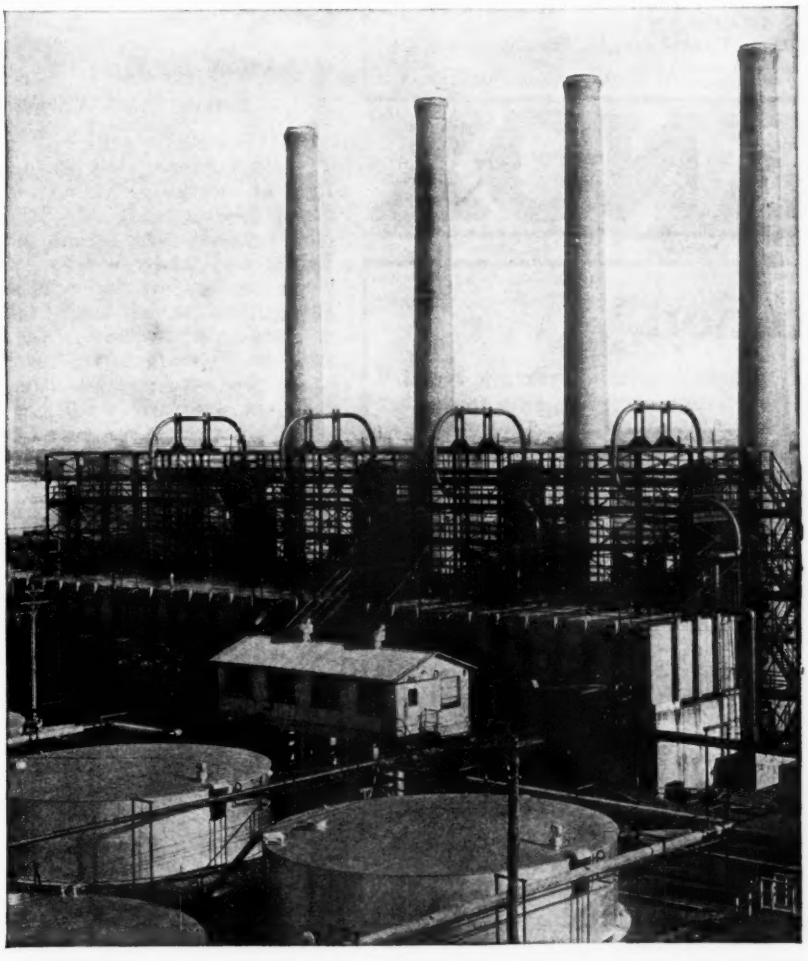
	Per Pound
Butane—$0.06/gal.	$0.0120
Freight car—15 cyls./car—$3,000.00/car one trip/month—15% dep., reps., & maint.	0.0020
Cylinders—loading capacity of 1,230 pounds /cyl.—$300/cyl.—one trip/month—25% dep., reps., & maint.	0.0051
Freight—Tulsa to Cleveland—$1.485/cwt.	0.0149
Depreciation—20% on $3,000.00—(loading rack, office, meters, lines, pumps, etc.)—10 carloads/month	0.0003
Interest—8% on $3,000.00	0.0001
Repairs, maintenance, insurance & taxes—15% on $3000	0.0002
Labor, power & misc. overhead	0.0024
Total cost per pound of butane	$0.0370
Less railroad mileage credit	0.0011
Net cost per pound of butane	$0.0359
Net cost per cubic foot of butane—6.5 cu. ft./pound at S. C.	$0.0055

BADGER DOUBLE COLUMN CONTINUOUS FRACTIONATING SYSTEM

THE Badger Double Column System for Continuous Fractionation makes possible maximum yields of controlled products at a minimum fuel consumption.

We have sold twenty-eight of these units since we developed this particular system two years ago. These units have a rated daily throughput capacity of approximately 200,000 barrels.

Many of the orders for these units are repeat orders.



The following Companies are some of those who have purchased BADGER Equipment:

Magnolia Petroleum Co., of Texas

Roxana Petroleum Corp.

Craig Oil Co.

Freedom Oil Works Co.

White Star Refining Co.

Gulf Refining Co.

Skelly Oil Co.

Phillips Petroleum Co.

Pierce Petroleum Corp.

Tide Water Oil Co.

Anglo-Persian Oil Co., Ltd.

Empire Refineries, Inc.

Marland Oil Co.

Vacuum Oil Co.

Associated Oil Co.

Barnsdall Corp.

Humble Oil & Refining Co.

Tidal Refining Co.

Standard Oil Co., of N. J.

General Petroleum Corp.

Beacon Oil Company

Lubrite Refining Co.

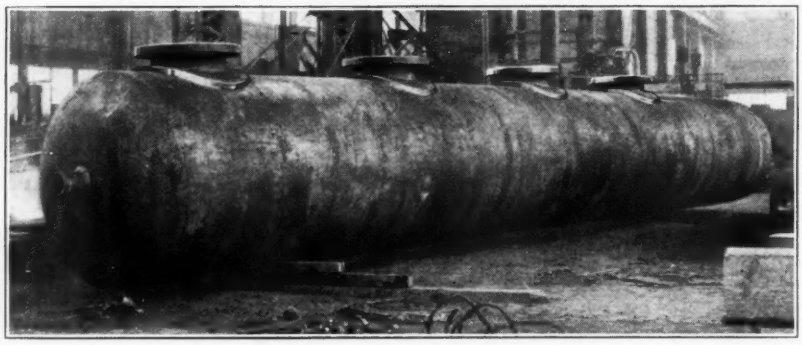
Pennzoil Company

Shell Company of California

E. B. BADGER & SONS COMPANY

New York · Kansas City · Tulsa · Los Angeles · Ann Arbor · Boston

BLAW-KNOX FORGE and HAMMER WELDING



Forge and Hammer Welded Pressure Stills, Expansion Chambers, Bubble Towers, Dephlegmators, and other apparatus for all pressures and all conditions of operation.

One piece—seamless—bottletight.

Send for Blaw-Knox Catalog of Forge and Hammer Welding.

BLAW-KNOX COMPANY
623 Farmers Bank Bldg., Pittsburgh, Pa.
Representatives in all principal cities.

BLAW-KNOX

As for filtration.....

NOT that filtration is the only pressing problem in refineries. It isn't. It's only one of many.

But filtration is particularly important in this way—it offers good possibilities of materially reducing costs for certain steps not now handled in this way.

Look over your flowsheet for steps where you think filtration might be profitably applied. Then put it up to United Filters engineers.

UNITED FILTERS CORPORATION

Hazleton, Pa.—Los Angeles Office, Central Building
Other Offices in Chicago—New York—Salt Lake City
Export Office—25 Broadway, N. Y.—Code Address, Unifilter, New York

Gottkool
WATER CANS & COOLERS
GOTT Water Cans are built to last. They keep water pure, cool and always near, saving time lost in getting a drink. Made in 1½, 3, 5 and 10 gallon sizes.
GOTT Water Coolers, 3, 5, 8, 10 and 20 gallon. Order from your supply store.
H. P. GOTT MFG. CO.
KEEP PURE WATER ALWAYS HANDY

The liquefied gas in each of these cylinders sells for about $15; the margin of $11.41 could be amicably divided between the natural gasoline manufacturer and his local distributor, after allowing the distributor a fair return on his investment in the cylinders, and after deducting the handling charges and sales expenses of each.

NO ACCURATE data are obtainable on the size of this market; obviously it is as large as the country itself and should be quite profitable to the natural gasoline manufacturer and beneficial to the inhabitants of small towns, rural districts, and backwoods summer resorts.

The second use suggested for natural gasoline was as a cutting medium in metal industries. Cutting at present is done by oxygen and acetylene; a mixture of butane and propane offers a better medium, because it is cheaper, cuts faster, and makes a cleaner cut than does acetylene. Some tests conducted in a metal plant prove that a butane mixture cuts about 20 per cent faster and costs less for the same amount of work on the same type of metal.

Butane Much Cheaper

ACETYLENE sells in Cleveland for approximately $3.50 per cubic foot of acetylene at a pressure of about 1,800 pounds per square inch. Under standard conditions (60 degrees Fahr., and 14.4 pounds per square inch) its cost would be about $0.01; butane can be delivered in Cleveland in large cylinders by the natural gasoline manufacturer, as outlined above, for a cost of $0.0055 per cubic foot (at standard conditions).

Table 4

Basis: Butane—tank cars—Tulsa to Cleveland.

	Per Pound
Butane—$0.06/gal.	$0.0120
Tank car—Class V—8,000 gals.—40,000 pounds—$8,200.—1 trip/mon.—20% dep., reps., & maint.	0.0034
Freight—Tulsa to Cleveland—$1.485	0.0149
Assume all other charges same as Table 3	0.0030
Total cost per pound of butane	$0.0333
Less railroad mileage credit	0.0011
Net cost per pound of butane	$0.0322
Net cost per cu. ft. of butane—6.5 cu. ft./pound at S. C.	$0.0050

Competing with acetylene solely on a basis of price, regardless of other advantages, the purchase of the natural gases seems more attractive to a metal company, when bought in large quantities in the larger cylinders.

In small quantities butane, being a liquid at higher pressures and hence incompressible after liquefaction occurs, would necessitate extra handling of more small cylinders. The margin, however, applicable to the natural gasoline manufacturer and the distributor, would be about $0.004 per cubic foot of gas used.

This market has no available data as to its exact size, but it is undoubted that a physical survey of

metal industries would show that there exists a market for this new cutting medium that would absorb a goodly portion of the gases available.

Butane A Good Refrigerant

BUTANE, mixed with a small percentage of propane, makes an ideal refrigerant. Refrigerator companies are realizing the value of a hydrocarbon gas for their purpose—a reliable, efficient gas to give a maximum cooling effect. Some companies are now using isobutane—a gas similar to butane, having a lower boiling point—but the high price for isobutane does not compensate for its slight advantages over normal butane diluted with some propane.

Isobutane in Cleveland sells for $0.40 per pound. A fraction of natural gasoline, rendering the same service, could be sold in Cleveland for $0.0198 per pound (See Table 5), if the market was adequate. This last cost would be the result of fractionating the natural gasoline at the industrial plant and separating the butane and propane from the remaining stable constituents of the natural gasoline. This market is still rather small, but the demand is growing, and is rapidly becoming profitable.

Market In Chemical Industries

BY FAR, the best market for butane lies in the chemical industries. Butane, contained in raw natural gasoline can be delivered to an industrial plant at Cleveland for $0.0198 per pound. On this basis, the butane can be converted to butyl alcohol at an estimated total cost of less than $0.12 per pound. This estimate is based on a daily theoretical production of approximately 5,000 pounds of butyl alcohol from 1,000 gallons of butane, with a plant investment of less than $100,000. The present market price for butyl alcohol is $0.20 per pound; this price would allow a spread of $0.08 per pound of butyl alcohol, or $400 per day, to go toward development expenses and profits.

Butyl Alcohol Has Many Uses

BUTYL alcohol, now made by the fermentation of corn, is used as the original base from which are made hundreds of chemical compounds, having myriad uses. Butyl alcohol, known in the trade as "Butanol", has the following principal uses:

1. Solvent—paint and varnish remover.
2. Solvent—explosives, artificial silk, collodion plastics, celluloid, etc.
3. Extractor—alkaloids, liniments, pharmaceuticals.
4. Film—motion picture, photographic, non-shatterable glass, etc.
5. Lacquers—spray and brush, dip and flow, etc.

Table 5

Basis: Butane—Shipped as natural gasoline and stabilized at destination—Tulsa to Cleveland. Assume 25% propane and butane & 75% other constituents of natural gasoline.

	Per Pound
Butane—$0.06/gal.	$0.0120
Tank car—Class IV.—$2,300—10% dep. reps., & maint.—one trip/month	0.0007
Freight—as natural gasoline—$0.56/cwt.	0.0056
Rectification cost (all charges included)	0.0005
Outage and handling cost	0.0005
Total cost per pound of butane	$0.0193
Plus excess freight on balance of natural gasoline shipped from Cleveland to Chicago—$0.265/cwt.	$0.0007
Total	$0.0200
Less railroad mileage credit	$0.0002
Net cost per pound of butane	$0.0198

6. Dopes—patent leather, artificial leather, etc.

Butyl alcohol can be treated by chemical processes to produce:

1. Chemical compounds of the butyl radicle group, e.g., butyl acetate, butyl butyrate, dibutyl tartrate, etc.
2. Perfumes, alcohols, and ethers.
3. Flavors and extracts.
4. Dyes.
5. Pharmaceuticals.
6. Plastics, films, artificial silks, lacquers, and leather dopes.

Butyl Alcohol Base for Duco

ALL of these products are now being profitably made from butyl alcohol. Perhaps, the two largest outlets for butyl alcohol and its derivatives, at present, are as the base for Duco paints and lacquers, and as the base for motion-picture films. These two demands have caused the output of some companies, manufacturing butyl alcohol, to treble within the past three years—and the end is not yet in sight.

There are several companies manufacturing butyl alcohol by the fermentation of vegetable products, who would be willing to make their butyl alcohol from butane. These several companies could easily purchase a considerable proportion of our production of butane.

Butyl Alcohol Market Growing

THESE companies are located at various points through the country, some at the source of supply of their raw material, others at their markets. But each of these companies presents a concentrated demand for a considerable amount of raw material with which to make butyl alcohol. (The Department of Commerce figures reveal the astounding fact that the demand for lacquers and varnishes, made from butyl alcohol, has increased from 9,200,000 pounds for the first half of 1924 to over 65,000,000 pounds for the first half of 1926.)

These data now conclude this series of articles on the by-products of the natural gasoline industry. If some practical use by the industry can be made from these suggestions, we will feel amply repaid. It must be borne in mind, however, that the figures on the prices at which products could be delivered to certain destinations do not include any profit.

Conflict With Refiner Possible

IT WAS our intention to compare the costs of manufacturing and delivering our own products with the selling prices of the products we desired to replace; the spread between the two would include the profit.

Individuals differ as to what constitutes a fair percentage of profit, especially on newly-developed enterprises; to avoid misunderstandings the total spread between cost and selling price was given.

Nothing has been said in these articles about the expense of sales development. This must be weighed very seriously before any policy of expansion into new markets is considered. This cost mounts very rapidly and a large investment is involved before any adequate returns can be expected. This cost per unit of sale is especially large where the unit of sale is small and where a large market exists for numerous small sales over a wide territory. In spite of these factors, the markets for by-products are waiting for someone who proceeds discreetly and with intelligence and by hard work to share in their inevitable profits.

Also, there are certain cases where, in the sale of by-products, the natural gasoline manufacturer might be competing against the refiner who is his customer for the sale of natural gasoline. Specifically, a natural gasoline manufacturer, operating under the third method of handling his natural gasoline, might sell his high-grade motor fuel through a jobber in the same territory in which a refiner, who buys natural gasoline from the manufacturer, was also selling high-grade refined gasoline.

It is true that such instances might occur, but they could be amicably settled without the loss of blood or business.

Oil Prices Will Rise

WHEN the price scale in the petroleum industry rises—as it inevitably will—there will be less need to manufacture and sell our by-products, and an economic balance will, of necessity, be struck to determine whether "gasoline as fuel" puts more money in the pockets of Mr. John D. Oil-Man than does "gasoline as Duco paint".

That bridge is not yet built; let us not worry about it until we are, at least, in its vicinity. In the meantime, let us continue to use brains, ingenuity, and hard work, and devise every means in our power to carry forward the great engineering triumphs of our industry, and make the fullest use of the raw material which a beneficent Providence has given us, so that this petroleum industry of ours will be not only great, but great—and profitable.

Hendricks Field First in West Texas Drilled With Rotary

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, March 30

EXCEPT in the Hendricks field, Winkler county, cable tools are used almost exclusively in the development of the Permian salt basin geological province of west Texas. Formations penetrated generally are favorable for use of standard equipment and frequently the problem of drilling water for rotary operations baffles solution.

In the Hendricks field, however, fully 90 per cent of the 200 wells drilled, or drilling, are rotary operations. Drilling water is readily obtainable from shallow strata and the rotary operates successfully in the formations found there.

Rotary drilling from the surface to the top of the lime serves several purposes in the Hendricks field. One of the most important is the ability to deal with a bad gas blowout situation, which can be easily handled in carrying down a rotary-drilled hole. Another is the greater speed with rotary, a saving of 40 to 45 days' drilling time.

Costs are lower also by rotary, reflecting the smaller outlay for pipe in that part of the field where it has been customary to set only two strings of casing, 12½-inch and 8¼-inch. Because of crevice conditions it is now becoming necessary in the northern part of the field to set as many as four or five strings. There, it is customary to start with 15½-inch, although in some instances 20-inch surface casing has been used.

The use of larger casing and additional strings increases the cost of rotary drilling proportionately. Even then the pipe expense will not reach to the nearly $13,000 required for finishing a cable tool hole. Where only the 12½-inch and 8¼-inch sizes are used in rotary drilling the pipe expense amounts to roundly $5,150.

A deep line well in the Hendricks field, Humble Oil & Refining Co.'s No. 4 Hendricks, showing Hughes valve, Christmas tree and turnbuckles

Rotary-Drilled Holes Cheapest in Winkler Field

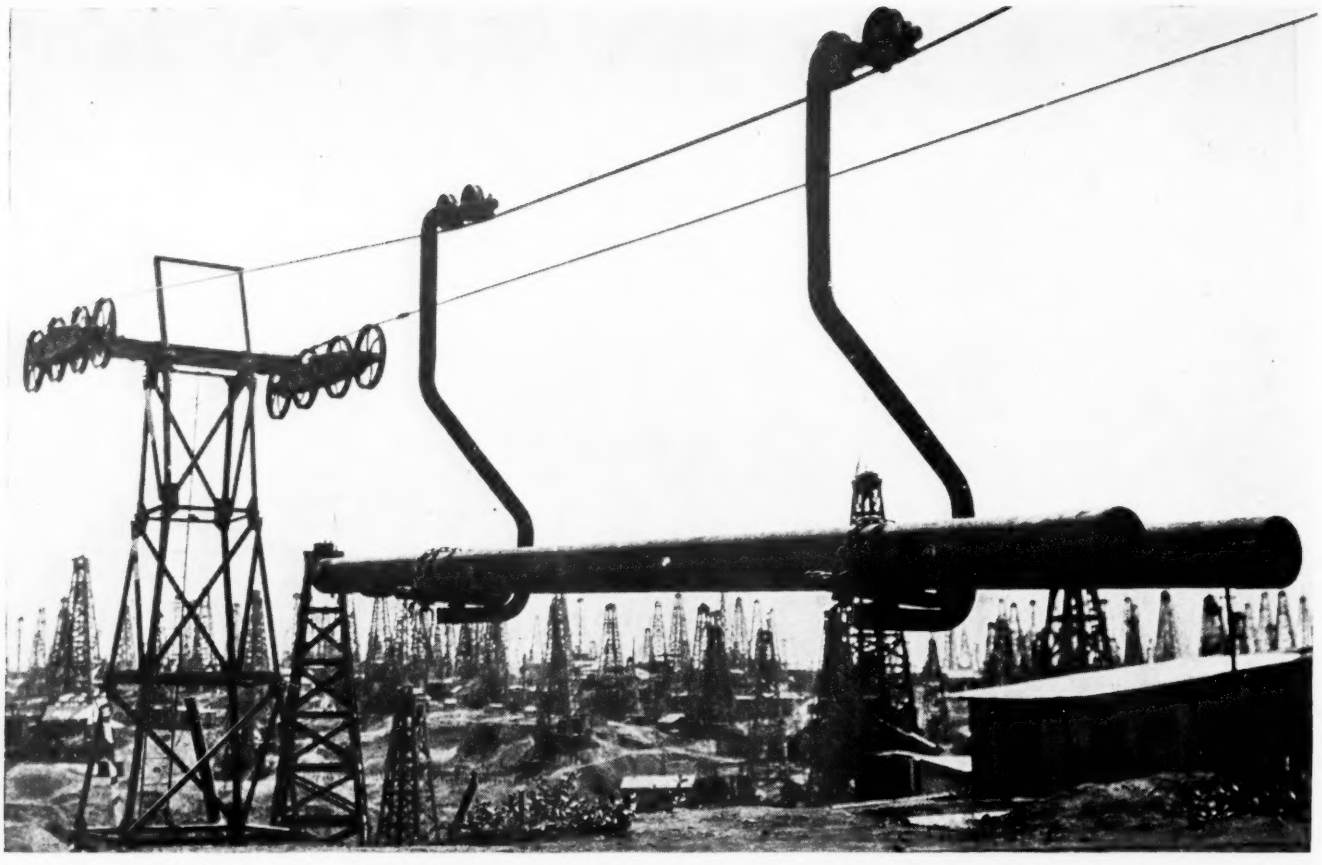
Cable Tools			Rotary		
81' 3" rig		$ 957.00	123' rig comp.		$ 2,416.80
Relegs		507.00			
Crows Nest		55.00			
Total		$ 1,419.00			
Labor		625.00			400.00
Lumber		1,914.84			1,059.00
Cellar		25.00			25.00
Slush Pit		60.00			60.00
*Gas		1,500.00			1,650.00
**Contract		14,750.00			17,700.00
15½"	277'	870.86	12½"	223'	709.24
12½"	730'	2,321.40	8¼"	2280'	4,423.20
10"	1374'	3,531.66			
8¼"	1540'	2,987.40			
6⅝"	2340'	3,276.00			
Cost of pipe		$12,987.32	Cost of pipe		$ 5,132.44
GRAND TOTAL		$33,266.16			$28,414.23

*1 boiler 100 days for cable tools, 2 boilers 55 days for rotary.
**2,950 feet at $5 a foot for cable, 2,950 feet at $6 a foot for rotary.

OPERATORS in the Hendricks area who are co-operating with a field committee described on page 44, Feb. 8 issue of NATIONAL PETROLEUM NEWS have recommended a minimum size of 8¼-inch casing be set. Where gas is absent above the big lime horizon it is their recommendation that the casing be carried well into the lime. In areas where the gas is found at the contact of the lime and the overlying anhydrite de-

There are many sound reasons why in the interest of the producer's pocketbook and the nation's supply of an irreplaceable commodity, all new fields should be afforded the protection of modern drilling and cementing methods. Three of these reasons are Smackover, Tonkawa and Seminole.

HALLIBURTON OIL WELL CEMENTING CO.
Duncan, Oklahoma



Conveying oil well casing by means of overhead cableway from a point fifteen miles or further, in the great Yen-an-Young in Burma. The Burma Oil Co. dominates the field, and its methods are strictly modern, while hundreds of natives there are busy constantly with open wells and buckets. This is one of the biggest oil fields in the Far East, and about 300 American drillers and other trained men are employed there

posits they recommend setting this string in the anhydrite above the gas.

The committee also recommends that operators attempt to case off the last salt stratum found just above the hard streak of anhydrite. When the gas is encountered before setting casing, it recommends the operator drill as much as 30 feet below this stratum, kill the gas with mud and then cement casing as a protection.

It is also recommended that such a string be cemented from its seat to the seat of the surface casing, using .294 sack of cement per foot for 8¼-inch casing in 11-inch hole; .225 sack per foot for 8⅝-inch casing in 11-inch hole; .695 sack per foot for 9 3/16-inch casing in 14¾-inch hole; and .667 sack per foot for 10-inch casing in 14¾-inch hole.

The field committee suggests that, in drilling into the lime, the hole should be reduced below the first oil pay, so that a lower string of pipe can be set on this shoulder in case of water encroachment from the upper level.

In case the operator desires to case below the second pay it is suggested that packer be run on the pipe between the first and second pays, insuring shut-off for water filtration that may exist between.

THE 200 wells drilled, or drilling, in Hendricks field represent an average cost of no less than $30,000 each, or more than $6,000,000 total. Footage costs paid to contractors now range between $6 and $6.50 as compared with $5 previously.

A comparison of drilling costs, using steel rigs in both instances, is shown in the accompanying table. It will be noted that the tabulations, which represent actual drilling costs on the respective wells, call for the use of only two pipe strings in the case of the rotary hole. The rotary column would require adjustment to take account of increased expense in the case of wells where other, and larger, casing is set.

First Aid Classes In Pa. Plants

CLEVELAND, March 28.—The fire marshals of the National Petroleum Association have changed their organization name to "Fire and Safety Marshals of the National Petroleum Association" so as to take in the new activity, that of accident prevention of all kinds, that the association assumed at its annual meeting in Pittsburgh, Jan. 12. This is according to E. M. Lyons, president of the National Petroleum Association.

The fire and safety marshals have taken up the offer made by representatives of the Bureau of Mines at their January meeting to teach the refinery workers first aid methods. H. R. Burdelsky and Joseph S. Ferraro, field representatives of the bureau, are now in Warren, Pa., carrying on this instruction.

First aid classes are being held afternoon and evening in the Y. M. C. A. at Warren, according to Mr. Lyons. Warren is the first Pennsylvania refining center where this training has been given and the refinery managers are urging their men to sign up for the classes.

Officers of the Fire and Safety Marshals Association are: James H. Herbert, Conewango Refining Co., Warren, president; James Sweeney, Viking Oil Corp., Warren, vice president and S. R. Brown, Mutual Refining Co., Warren, secretary.

HOUSTON, March 29.—John R. Suman, general chairman of the American Petroleum Institute division of development and production engineering, has appointed R. B. Kelly, Pure Oil Co., Fort Worth, as chairman of the Texas-Louisiana-Arkansas district. He succeeds E. O. Bennett of the Marland Production Co., who was recently transferred to Ponca City.

Plans are now under way to hold an organization meeting of this district the latter part of April, according to Carl A. Young of Dallas, executive secretary.

The famous flying field of Croydon, England. At the left is the first airplane filling station installed at the field. It was built by the Anglo-American Oil Co. The picture shows the manner in which the planes are fueled. The British are convinced that the pump is a more reliable means of filling the fuel tanks of airplanes than pouring in the gasoline out of 5-gallon cans

Oil Industry is Helping Aviation Grow Into Big Customer

Staff Special

CLEVELAND, March 30

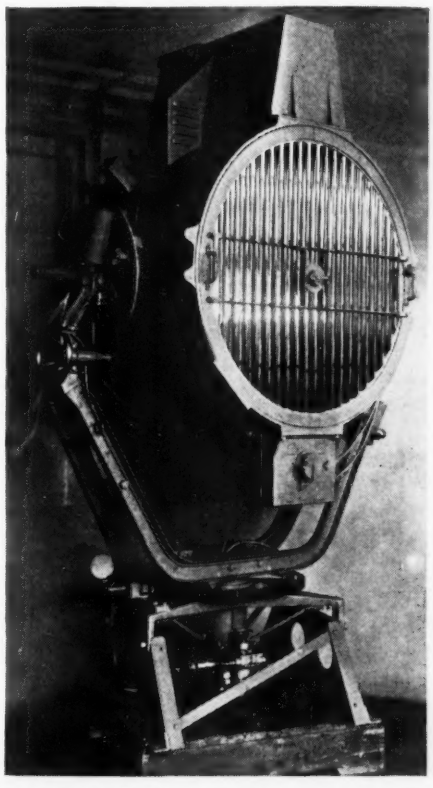
THE oil industry is getting ready to turn out, when needed, floods of motor fuel to drive the engines that in the future will speed through the air, on machine-made wings, millions of American travelers, and the motor oil to keep those engines from going lame.

This will not be such a great trick for an industry that, during the past 20 years, has furnished, in ever increasing billions of gallons, gasoline to carry legions of motorists daily over city streets and country highways and lubricants to meet changing needs in motor car operation.

Supplying oil and gasoline for aviation is a serious responsibility. If an automobile engine stops because of some fault of gasoline or lubricating oil it means an exasperating delay. High in the air in a plane engine failure often means death. But the oil industry is alive to the responsibilities.

Just how long it will be before the airplane and the dirigible balloon begin to make appreciable demands for motor fuel and oil no one can tell. Progressive oil companies, however, while waiting in a state of pleased expectancy for the day when clouds of aircraft will darken the sky—each burning gasoline at the rate of a barrel an hour—are not neglecting the opportunities for business that aviation now offers.

The strides that are being made in the technique of aviation are kept constantly before our eyes by brilliant and daring stunts—feats of a Lindbergh, a Chamberlin, a Coste, a Byrd or a Brix. However, we little realize how much safe, sane, unsensational flying is going on day and night, carrying mails and passengers and even commodities for profit, keeping regular schedules of express trains and at more than twice their speed. This sound business is growing every day.



The 36-inch electric beacon built on Mt. Diablo, near San Francisco, for the guidance of aviators. Another like beacon is to be erected near Los Angeles. These are contributions of the Standard Oil Co. of California to the cause of aviation

Oil companies on their part, are also doing as much as any other industry to speed up and make a reality large scale commercial flying. It is not at all a one-sided affair.

THE oil companies are doing these things to obtain the business of fueling and lubricating aircraft:

1—Developing special fuels for airplane motors.

2—Developing special lubricating oils, particularly oils possessing high fluidity at low temperatures.

3—Erecting permanent or temporary fuel and oil stations on flying fields where needed to care for special occasions like flying tournaments or for every day servicing of commercial aircraft.

4—Conducting constant research to determine the types of fuels and lubricants best adapted to flying use.

5—Buying and extensively using airplanes in company business and for advertising.

And here are some things the in-

Tri-motored plane recently bought by The Texas Co. for demonstration and research work and for sales promotion of oils and fuels for aviation use

dustry is doing to promote the cause of aviation:

1—Making flying fields.

2—Painting the names of towns on roofs of bulk stations to guide aviators on their way.

3—Putting up beacons and flood lights of various sorts to make night flying safer.

4—Using airplanes, not only for flying executives on company business, but also for carrying mail and valuable fast express goods.

The Standard Oil Co. of Indiana was the first big company to buy a large airplane, although at that time many smaller planes were owned by producing companies and used frequently by scouts and field executives for covering the ground quickly.

However, the Stanolind, the big plane bought from Ford by the Indiana company, began at once making business trips, carrying on some occasions most of the board of directors of the company.

One purpose of the purchase of the Stanolind was frankly announced as advertising to promote the cause of aviation and popularize it among big business men by the power of example. Also, the Standard of Indiana launched a campaign to obtain the business of supplying air craft with fuel and lubricants.

Chestnut & Smith, Skelly Oil Co., Phillips Petroleum Co., and other companies brought out special motor fuels for use in airplanes, based largely on research work and tests by Dr. George Granger Brown of the University of Michigan. These special fuels were largely or wholly natural gasoline products.

THE TEXAS CO. is the latest large company to go actively into the aviation business. It has bought a plane, hired a pilot and constructed a flying field near its refinery at Port Arthur, Tex., and is bidding for aircraft business. The Texas Pacific Coal & Oil Co., Fort Worth, is another company that has lately bought a plane, hired a pilot and is going after the airplane lubrication business.

Standard Oil Co. of California has also ordered a big plane and employed a pilot.

The Sandard of California is also doing much to furnish guide posts to the aviators. It has erected an electric beacon on Mt. Diablo, near San Francisco, said to be the strongest light in the world. This will be in operation before the end of March and a few weeks later a similar one will be in service in the Merced Hills, in Los Angeles county, also donated to the cause of aviation by the California Standard.

The beacons, of 10,000,000 candle power each, will be visible to aviators for more than 100 miles and from the ground for 75 miles. Each light has a 36-inch lens and will revolve six times per minute. The location of the beacon on Mt. Diablo, 3849 feet high, is usually above the fogs that frequently prevail over San Francisco bay. The Department of Commerce has given the Mt. Diablo beacon the insignia SD standing for "Standard-Diablo" and the southern California beacon bears the insignia SL, standing for "Standard-Los Angeles".

The placing of these beacons is in keeping with the policy adopted by Standard of California some time ago of painting the name of cities and

This is the airplane used by the Westland Oil Co., Scobey, Mont., in making inspection trips around its string of stations

towns on the roofs of its warehouses on the Pacific coast.

More than 500 such daylight signs now serve as "road signs" for the traveler in the air.

Where there is sufficient roof space at bulk stations, the name of the city is painted in large letters and in addition there is an arrow, pointing north.

Nearly everyone has seen or read

A signpost in the desert for the aviator. Standard of California bulk station at Caliente, Nev.

of the Mojave desert. A photograph shows the Standard's Mojave warehouse. An aviator out of gasoline might land here for a new supply, if he was careful to dodge the sand dunes.

STANDARD of California makes a special grade of gasoline for airplane use. Lindbergh uses this gasoline in his flights, wherever possible.

Lieutenants Maitland and Hegenberger used Standard aviation gasoline, as did the Hawaiian fliers Smith, Bronte, Jensen and Scleutter. Seven of the Dole flyers used the same brand, and 41 of the 46 prize winners at National Aero races at Spokane used Standard of California aviation gasoline.

Details for a suitable service station for the benefit of the airplane have not been worked out, hence the machines are served from the Standard's tank wagons at the various public and private fields. Standard officials, however, go out of their way to serve airplanes in every way possible.

The Texas Co. has gone in for aviation in what is described as an aggressive policy for securing its share of business from this field. An aviation division in the company's organization has been formed. The company has bought a Stout all-metal monoplane which was delivered on Feb. 25 and employed Capt. Frank Hawks, a nationally known aviator as pilot.

It is a tri-motored plane with a 74-foot wing spread, equipped with a Wright "Whirlwind" 200 h. p. motor on each wing, and a Pratt & Whitney "Wasp", 400 h. p. motor on the nose. It weighs about three tons, has a rated ceiling climb of 15,000 feet, a safe load capacity of two tons and will accommodate 10 passengers with hand luggage. Fixed and auxiliary fuel tanks will give it a cruising radius of 1500 miles.

Capt. Hawks has more than 10 years' aeronautical experience in the army and in commercial service, flying practically all types of aircraft, both light and heavy, with a record of more than 7,300 hours in the air which represents more than 700,000 miles in all parts of the United States and Mexico. Over 40,000 miles of this has been flown in the last six months.

The Westland Oil Co., Scobey, Mont., a few months ago bought an airplane the better to keep in touch with its branch marketing stations. The company operates in 48 towns in northeastern Montana, northwestern North Dakota and Saskatchewan, stretching 555 miles.

UNTIL recently automobiles have been used in conducting inspections, and so on. Unfavorable weather and bad roads delay these inspections considerably and make communication with the stations difficult, according to Joseph B. Townsend, supervisor of sales.

That the airplane has proven not only economical and practical, but has effected a 500 per cent saving in time is told by Mr. Townsend who says;

"We have found that we can reach our stations more economically by plane than by train or car and we have in effect reduced the distance of the stations farthest from our of-

NIAGARA METER TRAVELS

No. 12
SAN FRANCISCO, CAL.

THE two Niagara Meters shown above are installed in the large refinery of the Standard Oil Company of California, which is located on San Francisco Bay. These meters are of the 4 inch JV type and are used for measuring gasoline as it is pumped from one point to another. Together, these meters will measure 1000 gallons per minute . . . accurately!

Measure by Meter for Accuracy

Wide-awake refiners and marketers everywhere have been quick to realize the real value of Niagara Oil Meters. They know that automatic measuring of gasoline, kerosene, alcohol, lubricating oils, crude oils or fuel oils can be best accomplished with Niagaras. Years of constant operation under the most trying conditions have proven their ready adaptability to measuring petroleum products accurately and dependably and at the lowest possible cost of upkeep.

No matter what branch of the petroleum industry you are in there are sizes of Niagara Oil Meters that will definitely meet your individual requirements. The coupon will bring you full information Mail it today!

BUFFALO METER COMPANY
2889 Main Street, Buffalo, New York

Niagara
Oil Meters

Vertical or Horizontal Dial

Sizes from ½ inch to 6 inches

Buffalo Meter Co., 2889 Main St., Buffalo, N Y.

☐ Tell us more about Niagara Oil Meters.

☐ Send us a copy of your Niagara Oil Meter Booklet and Price List.

Firm.....

Type of business.....

Address.....

Inexpensive Visibility for your Piston Type Pumps

THE G & B Visible Discharge Indicator can be quickly attached to any piston type pump. It adds, at a low cost, the desirable sales-compelling factor of visibility.

The G & B Visible Discharge Indicator displays your product to appealing advantage. It affords the customer conspicuous evidence that the gasoline is flowing to his car. And it increases his confidence in the reliability and accuracy of your dealer's service.

Finished in aluminum unless otherwise specified. Capacity about one pint. Write for Bulletin T-140 giving complete information.

GILBERT AND BARKER MANUFACTURING COMPANY
PUMPS and TANKS FOR THE OIL TRADE
SPRINGFIELD MASS. U.S.A.

Guaranteed 100% PURE PENNSYLVANIA OIL

GASOLINE

It is the Gasoline that repeats and meets the full demands of the trade.

GASOLINE

It makes satisfied customers and can be secured in either Straight Run or Blended.

GASOLINE

We have the output of two refineries located at Warren in the heart of the Pennsylvania field.

GASOLINE

Have you prepared for your coming season's supply?

Write—Wire—Phone

SUPERIOR OIL WORKS
Warren, Pa.

Making Flying Fans

CAPT. FRANK M. HAWKS is now on the first lap of a two-years' tour undertaken by The Texas Co. for the advertising of its products and the promotion of aviation.

Captain Hawks will visit the larger cities throughout the United States, stopping long enough at each place to take business leaders on trial flights; also he plans flying the new plane in the national air tour, scheduled to begin at Detroit, June 30, for a 6000-mile trip over the country.

The Texas Co.'s inauguration of aerial selling was officially begun by Captain Hawks after the new plane had been flown to Houston for the official dedication of the municipal airport, March 2. Before reaching Houston, however, the plane had visited Atlanta, Jacksonville, Miami, Tampa, and New Orleans, after leaving Detroit, Feb. 21.

When the official take-off for aerial selling was made, March 8, on a flight from Houston to San Antonio, Captain Hawks was accompanied by his wife, who will go with him over the country; P. J. Clausen, mechanic, obtained by The Texas Co. from the Ford-Stout manufacturing interests; and a number of passengers.

fice from 16 hours by automobile or train to three hours by plane."

The ship is a monoplane made by the Ryan Air Lines at San Diego, Cal., and is the same kind of ship used by Lindbergh in his New York-Paris flight, excepting for the motor. It is called the Ryan M-1.

The normal cruising speed of the ship is 100 miles per hour and most of the company's stations can be reached in less than an hour by airplane, Mr. Townsend says. The big saving in time and easy communication with the stations have convinced the company of the economy of the airplane as a permanent part of its transportation.

It also has good advertising value, as the company trade name "Dura" is painted beneath the wing and "Westland" on top of the wing.

A pilot is employed regularly and the plane kept busy most of the time. The "open spaces" of the territory afford good landing fields and no difficulty has been experienced in reaching the points desired, according to Mr. Townsend.

SUPPORT of the air mail, air passenger and air express service wherever possible was urged on the oil industry by L. V. Nicholas, former president, Independent Oil Men of America, in a circular letter sent out to this membership under date of March 5. Mr. Nicholas says:

"How much of your mail do you route 'via Air Mail'?

"Have you ever considered what a wonderful opportunity is offered our industry to endorse in a practical way this new form of rapid transit?

"Practical backing of actual use of the air mail by the oil industry is capable of doing great things to develop new and superior uses for petroleum products.

"We are lavish supporters of the telegraph lines—we use the telegraph many times where air mail would answer the purpose as well or better.

"The success of air mail carries with it more rapid development of air transit lines carrying passengers and freight.

"Every airship launched is the equivalent of a flock of automobiles as a consumer of petroleum products.

"Spend 10 cents for air mail postage even where a 2-cent would accomplish the same purpose.

"Every extra penny you might feel that you are throwing away in the support of air mail will be an ultimate dollar in the industry's pocket.

"Patronize air mail, patronize air transit lines, spend your money in a practical way for the upbuilding of a service that promotes the best interests of the industry of which you are a part. This is industrial common sense."

OKMULGEE, March 29.—Kingwood Oil Co. at its annual meeting reported reduction of indebtedness in 1927 of $110,000, to $65,000. During the year its acreage was increased by 44,551 acres, making total leaseholds at end of year more than 100,000 acres. Properties are in Oklahoma and Texas. Production at the end of the year was nearly 2,000 barrels daily. Officers were re-elected, these being Joe T. King, president; M. F. Graham, vice-president; W. E. Wood, secretary and treasurer and F. M. Wood, assistant secretary and treasurer. The board of directors consists of the officers and Charles Bergquist, general superintendent.

HOUSTON, March 30.—L. G. Hughes is now head of the land department of The Texas Co., at Shreveport division offices, succeeding W. M. Redditt, resigned. Mr. Hughes had been in the production department after its absorption of the gas department, which he formerly headed.

THESE two new models are of the same high quality that has always characterized Rapidayton Pumps—the same stamina, the same accuracy and speed. They have more dignity of line and beauty than previous models, and even greater mechanical simplicity—the simplicity of design that insures long life and positive, accurate operation without adjustment or servicing.

Both are of the Eye Measurement type, closely controlled and capable of great accuracy and speed. Cut No. 600 is our Standard Eye Measure Pump. Cut No. 625 is the same model but with a 9¾ inch glass cylinder as required by law in some states. Both can be supplied with either wet or dry hose.

Their greater value notwithstanding, these models sell at the lowest prices ever placed on Rapidayton equipment. Write or wire for Visible Bulletin.

THE DAYTON PUMP & MFG. CO.
Dayton, Ohio

Sales Representatives in Principal Cities

dayton

MARK REG. U.S. PAT. OFF.

Rapidayton

Cut No. 625

...PRICE EITHER MODEL WET or DRY HOSE $90.00 F.O.B. DAYTON OHIO

QUANTITY AND EXPORT PRICES UPON APPLICATION

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

Obsolescence Eats Up Profits

OBSOLESCENCE on Burton cracking stills which were scrapped at the Standard Oil Co. of Ohio refineries at Cleveland and Toledo during 1927, totaled $2,756,622, according to the company's financial statement recently put out. This is commented on by President A. P. Coombe of the Company as follows:

"No reserve has been set up and no provision has been made in computing net earnings for federal income tax for 1927, due to the fact that the loss caused by the obsolescence of the company's Burton stills more than offsets the net earnings for the year and will be taken as a deduction on the company's federal tax return."

The statement goes on to say that all the Burton stills have been replaced with Tube and Tank units, batteries of which have been installed both at the Cleveland and the Toledo refineries. The new stills are said to embody the latest and most advanced design in cracking equipment, to be more economical in operation and to produce a greater yield of a better gasoline than the stills they replace.

Royalties on the operation of the Tube and Tank process, to the amount of $700,000 have been paid in advance by the Standard of Ohio, the statement shows.

Are Radical Changes in Equipment Coming?

THE first improvement on the old shell still was a better shell still. It was a long time before an entirely new type, the pipe still, was developed. It is the tendency of inventors to seek first to better the working of the equipment they have and know. The first automobile was a buggy. The first steamboat clung to characteristics of the sailboat. Eventually the inventor gets to the point he throws away his old ideas and designs a radically new piece of equipment.

The pipe still has become just about a standard piece of equipment. Some are doubtless better than others but all are pipe stills. And of course, our old friend the shell still is with us yet.

The proposals made by C. W. Stratford at the A. I. M. E. meeting in New York Feb. 22 and published in National Petroleum News lead one to wonder if there are immediate further radical changes coming in the refining field. The time seems ripe for them. If the pipe still has been carried to about the highest efficiency that can be hoped for, then something else is due to appear.

The Small Refinery in the Field

ALL this talk about small refineries being built in 1928 to take the place of some of the refinery capacity now represented by large plants, prompts the remark that this idea, of course, isn't new.

Three or four years ago, when new oil fields were discovered in New Mexico, the Continental Oil Co. built two small refineries, one at Farmington and one at Albuquerque, I believe, to handle this oil. I think three or four similar plants were built in Colorado and Utah to handle the production from small fields.

However, the building of these little skimming plants was caused by the physical impossibility or the economic unwisdom of building lines into the fields, run existing refineries, and the fact that it was easier to make up the crude into products on the spot and sell the products in nearby territory than to haul the crude hundreds of miles by tank car to a refinery, make it up into products, and then distribute these products by another freight haul.

Making Employes Feel Safe

THE feeling that they are sure of their jobs, that if they do their part the company employing them will do its part, ought to make better and happier workers. R. C. Holmes, president of The Texas Co. evidently had this thought in mind when he stated at a gathering of Texas Co. employes in New York recently:

"In our treatment of employes we do not want in any way to be unfeeling or inconsiderate and only those who are indolent, incompetent, dishonest or disloyal need have any fear of not having employment somewhere in the company if not needed in the positions they now occupy."

Preventing Still Fires When Pumping Out

PROBABLY most refinery operators when about to pump out stills, always open the valve on the tar line at the back of the still. Possibly some do not always take that precaution. The danger of not doing so was brought out by Bernard O'Connor, refinery manager of the California Petroleum Corp. in a recent address before the California Natural Gasoline Association. He said:

"This is important as by getting the pumps started as outlined any small amount of water condensate left in the line from previous pumping is pulled out before the hot stock from the still enters the line and prevents a blow at the still due to water turning to steam suddenly and blowing the still safety valve.

"I have seen a bad fire caused by not following this procedure, due to hot oil hitting water in the tar line and the tar line breaking by sudden impact."

The Importance of Insulation

BETWEEN 25 and 50 per cent of the entire cost of refining oil is the cost of the fuel, H. S. Bell, refinery engineer of New York, recently stated in an address. It is generally agreed that the fuel cost is the largest single item in the refiner's expense sheet. That being the case insulation to conserve the heat after it has been generated by the burning of fuel is most important.

While theoretically the refiner should choose the insulating material of highest thermal efficiency, Mr. Bell said that actually the structural adaptability and durability are equally important as in many places in the refinery, workmen must climb about on it in making changes to piping and so forth. Mr. Bell's paper on insulation will be published in an early issue.

Oil Trademarks for Copyright

The following are trademark applications pertinent to our field pending in the United States Patent office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister Building, Washington, D. C., trade-mark specialists.

As an additional service feature to its readers, this journal gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering. You may communicate with the Editor of this Department, or send your inquiry direct to the National Trade-Mark Company, stating that you are a reader of this journal.

"XCV" No. 260,776. Sun Oil Company, Philadelphia, Pa. For lubricating oil.
"XCIV" No. 260,775. Sun Oil Company, Philadelphia, Pa. For lubricating oil.
"FILMAC" No. 249,560. George Wisner, Clichy, France. For lubricating oils and greases.
"BONDED" No. 261,095. The Bartles-Maguire Oil Company, Milwaukee, Wis. For gasoline, motor oils, and other lubricating oils and greases.
"XCII" No. 260,773. Sun Oil Company, Philadelphia, Pa. For lubricating oil.
"XC" No. 260,771. Same as above.
"XCI" No. 260,772. Same as above.
"XCIII" No. 260,774. Same as above.
"LXXX" No. 260,762. Same as above.
"LXXXVI" No. 260,768. Same as above.
"LXXXV" No. 260,767. Same as above.
"LXXXIV" No. 260,766. Same as above.
"LXXXIII" No. 260,765. Same as above.
"LXXXI" No. 260,763. Same as above.
"LXXXVII" No. 260,769. Same as above.
"XCVIII" No. 260,779. Same as above.
"XCVII" No. 260,778. Same as above.
"XCVI" No. 260,777. Same as above.

Old "Slander" Suit Ends In Chicago Court

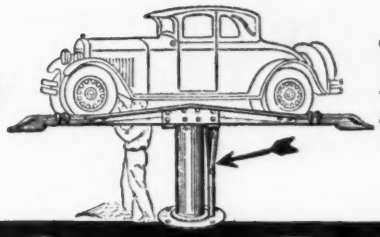
CHICAGO, March 24.—Judgment for $100,000 damages in favor of Lion Oil Co., a Chicago jobber against Sinclair Refining Co., was allowed by a jury in the Circuit Court of Cook County, Ill., on March 22. The case is more than two years old. The plaintiff charged Sinclair Refining Co. with slander, alleging that Sinclair salesmen soliciting Lion Oil Co. dealers told them that the Lion was on the verge of bankruptcy.

The case was filed in the spring of 1926 by Lion Oil Co., asking for $1,000,000 damages. The trial took place March 19 to 22 inclusive in Judge Craig Hood's court. The jury deliberated for four hours. Warren W. Pease, lawyer for Sinclair, moved for a re-hearing which will be argued March 31. If it is denied he will take the case to the Supreme Court, he says.

The jobber was represented in the cause by Charles E. Carpenter, a Chicago lawyer. In his presentation of the case, Mr. Carpenter attempted to show that the alleged remarks derogatory to the jobber's standing were not the loose talk of some ignorant salesman but a consistent policy of the city sales force under direct instructions from the management.

Witnesses were brought in to testify that substantially the same story, about Lion Oil Co.'s being "on the rocks", was told to dealers in 35 different instances.

"Quick Service"



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Safety Lift

16 Beaver Street, New York City

Oil And Grease Formulas

200 formulas, have been prepared in a simple, non-technical style by Forrest A. Hoff.

They are of value to the refiner, jobber, compounder, broker and lubricating engineer.

Just attach your check to this ad and return it to us now. $15 is the reasonable cost of all this information. Synopsis sent upon request.

National Petroleum News
1213 West 3rd St. Cleveland, Ohio

Not "Just a wide spot in the Road"

YOUNGSTOWN is one of America's important manufacturing cities. It is second in the world's steel production. Four transcontinental railroads converge here. It is not "just a wide spot in the road"—over 200,000 people call it home.

In such a city "Youngstown" Tanks are made.

Bulletin No. 15 describes the entire line.

The Youngstown Boiler & Tank Co.
Youngstown, Ohio

Youngstown TANKS
"KEENE STANDARDIZED MADE"

"What's in a name?" "EVERYTHING", *answers the American Public - - -*

THE American public buys on faith and repeats on confidence.

Confidence forms the very foundation on which the structure of satisfactory relationship between buyer and seller exists.

"Defiance" performance—based on years of experience in studying the practical requirements of the oil industry—is the explanation of the high regard in which "Defiance" Steel Barrels are held in the industry.

Our constant care is to see that this reputation is upheld through consistently maintaining the quality that has identified "Defiance" Steel Barrels with a high degree of value among buyers in the oil industry.

THE AMERICAN STEEL PACKAGE CO.
Defiance, Ohio

DEFIANCE

Distinguished for Honest Value

GRANBERG PETROLEUM METERS

Are Precision Instruments of Established Merit

They are extensively used on Tank Trucks, Truck Loading Racks and Tank Car Unloading Lines and are universally satisfactory wherever it is desirable to secure accurate measurements.

We have made a technical and practical study of the problem of accurately measuring petroleum oils and are prepared to give expert advice and assistance on the subject.

Engineers from our home office are permanently located in the Middle West and on the Atlantic Coast, for the purpose of helping our customers with their metering problems.

It will pay you to use our meters and profit by our knowledge and experience.

GRANBERG METER CORPORATION
"Precision Meters for Petroleum Oils"
79 New Montgomery St. **San Francisco, Calif.**

New Patents

March 13, 1928

REFINING

Process and Apparatus for Distilling Oil—Henry L. Doherty, New York, N. Y., assignor, by mesne assignments, to Heat Treating Company, New York, N. Y. Filed July 7, 1920. No. 1,662,105.

Evaporator and Method of Operation—Carl F. Braun, San Francisco, Calif. Filed March 14, 1922. No. 1,662,142.

Heat-Exchange Apparatus—Carl F. Braun, Pasadena, Calif. Filed March 28, 1923. No. 1,662,143.

PRODUCTION

Pumping Jack—Daniel H. Thomas and Edward A. Schambs, Wichita Falls, Tex. Filed Jan. 31, 1927. No. 1,662,087.

Deep-Well Pump—Bernie G. Primrose, Plemons, Tex. Filed Sept. 2, 1926. No. 1,662,127.

Underreamer—Benjamin Franklin Waldron, Duncan, Okla. Filed April 28, 1925. No. 1,662,138.

Well-Capping Device—Leland S. Hamer, Fullerton, Calif. Filed Apr. 4, 1923. No. 1,662,311.

Well Packer—Charles H. Reynolds, Houston, Tex. Filed April 30, 1926. No. 1,662,336.

Drill Stem—John F. Bozeman, West Columbia, and Jaudon D. Cole, Orange, Tex. Filed July 13, 1925. No. 1,662,358.

Casing Head—Chester C. Hosmer, Huntington Beach, Calif. Filed Sept. 15, 1922. No. 1,662,707.

MISCELLANEOUS

Bromine Recovery—Graham Edgar, Dayton, Ohio, assignor to Ethyl Gasoline Corporation, Dayton, Ohio. Filed Oct. 13, 1925. No. 1,662,305.

Motor Fuel—Thomas Midgley, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich. Filed May 16, 1925. No. 1,662,323.

Bromine Recovery—James P. Andrew, Detroit, Mich., assignor by mesne assignments to General Motors Corporation, Detroit, Mich. Filed Oct. 22, 1925. No. 1,662,355.

Process for Producing Asphalt Paving Mixtures—James Shelby Downard, Dallas, Tex. Filed Aug. 11, 1923. No. 1,662,377.

Heat Treatment of Materials for Distilling, Drying or Carbonizing Them—Arthur McDougall Duckham, Douglas Rider, and John Simkins Watts, London, England. Filed Jan. 12, 1925. No. 1,662,663.

Reclaiming Process for Used Crankcase Oil—William H. Ellerington, Naples, N. Y. Filed Jan. 23, 1926. No. 1,662,701.

March 20, 1928

REFINING

Separator—William M. Little and Jessie L. Sherman, Norphlet, Ark. Filed Oct. 9, 1926. No. 1,663,411.

Oxidation of Hydrocarbon Oils—Ebenezer Emmet Reid, Baltimore, Md., assignor to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed July 5, 1921. No. 1,663,523.

Production of Acids—Ebenezer Emmet Reid, Baltimore, Md., and Charles E. Burke, Wilmington, Del., assignors to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed Feb. 14, 1925. No. 1,663,524.

PRODUCTION

Rotary Casing Head—Bernard H. Scott, Glendale, and Samuel E. Ross, Long Beach, Calif., assignors to Scott Ross and Company, Los Angeles, Calif. Filed March 18, 1926. No. 1,662,984.

Well-Underreaming Tool—Malden C. Lowman and George E. Fentress, Los Angeles, and Robert Bane, Fullerton, Calif. Filed Sept. 5, 1922. No. 1,663,014.

Underreamer—Earl S. Hartson, Los Angeles, Calif. Filed April 11, 1927. No. 1,663,048.

Sectional Barrel for Oil-Well Pumps—John A. Zublin, Los Angeles, Calif. Filed Feb. 16, 1925. No. 1,663,228.

Apparatus for Elevating Oil and Other Fluids—Lester H. Miles, Los Angeles, Calif. Filed Oct. 27, 1926. No. 1,663,312.

Rock Bit—Clinton H. Bull, Columbus, Ohio, assignor to Clarence C. Le May, Columbus, Ohio. Filed Aug. 4, 1925. No. 1,663,332.

Mud-Laden Fluid for Oil and Gas Wells—Lee Chamberlain, Los Angeles, Calif., assignor to Chamberlain Co., Inc. Filed Aug. 2, 1926. No. 1,663,492.

MISCELLANEOUS

Decolorizing Carbon and Process of Making Same—Charles Hallsteam Chandler, Newport, R. I. Filed June 18, 1920. No. 1,663,000.

PROTECTION

NevrNox Gasolene protects both user and dealer. ¶It protects the user against losses due to motor troubles and consequent repair bills. ¶It protects the dealer against loss of business through dissatisfied customers. ¶And, as NevrNox is seldom affected by destructive price competition, it protects his profits.

NevrNox is a pure, unadulterated, highly refined gasoline. Non-poisonous • • safe to use • • easy on motors. It is a proven fuel for the new high compression motors, and greatly improves the performance of older types as well.

Write our nearest office for full particulars.

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Our Industry — A Page of Facts and Personalities

National Petroleum News

By Paul Wagner

If one considers present west Texas development as representing activity remote from railroads, in many instances, then it it well to take a look at the currently significant wildcat well of Cecil Bordages, and others, in 27-19S-38E, Lea county, New Mexico. The Bordages test, on the Jennie Hughes ranch, became important when it recently made between 5,000,000 and 10,000,000 cubic feet of wet gas daily, also spraying a little oil, at about 3110 feet.

In three directions the well is upwards of 65 miles away from a railroad; to the north the distance is even farther. On the west, a branch of the Santa Fe is closest to the well at Carlsbab, N. M.; to the south, the Texas & Pacific passes through Monahans and Pyote, both ports of entry to Winkler county, Texas, oil development; southeasterly, across Andrews county, Texas, are found Odessa and Midland, also on the Texas & Pacific.

The reader may draw his own picture of transportation problems through barren plains and across sand dunes similar to those found in Winkler county, Texas. It is interesting to note, however, that the Bordages and other wells show similar characteristics to the Texas Production Co.'s Rhodes completion, about 40 miles south of it in the same county, which produces about 110 barrels of oil and 22,000,000 cubic feet of gas daily at similar depth. Both are in the New Mexico part of the Permian age salt basin now yielding important crude supplies from various Texas fields.

* * *

Joseph M. Weaver, president of the States Oil Corp., Eastland, owns one of the finest poultry farms in Texas. This pioneer of Ranger district development makes the raising of white Leghorns and Rhode Island reds his hobby. The hatchery, which has a capacity of 20,000, is turning out chicks at the rate of 2500 a week. Two thousand hens are kept as breeding stock. His farm a half mile from the town of Eastland is said to represent an investment of $50,000.

* * *

R. S. Knappen, geologist, has been transferred from the Pittsburgh general offices of the Gulf Companies to the Tulsa headquarters of Gypsy Oil Co., Mid-Continent subsidiary.

Woodall Rodgers, on the left, is a lawyer, and Leon J. Pepperberg, on the right is a consulting engineer and geologist; both are from Dallas

Woodall Rodgers, at the left, is a member of the Dallas law firm of Turner & Rodgers, Texas attorneys for the Dixie Oil Co., Inc., direct producing subsidiary in the southwest of the Standard Oil Co. of Indiana.

Leon J. Pepperberg, at the right, is a consulting engineer and geologist of Dallas, who at present is giving about half his time to the organization of a geological department for the Columbia Management & Engineering Corp., which is the operating subsidiary of the Columbia Gas & Electric Co., with properties in Pennsylvania, Ohio, Kentucky and West Virginia.

The snapshot was taken on the golf links at the River Crest Country Club, Fort Worth.

* * *

E. G. Allen, general superintendent of the central division of Roxana Petroleum Corp., directs Texas field operations from Dallas headquarters. Before transfer to Dallas he was identified with Roxana operations at both Tulsa and St. Louis. His company recently has been increasingly active in the Permian salt basin oil producing region, which the associated Shell Pipeline Corp. is linking with its Mid-Continent system by building a trunk outlet from McCamey to Healdton. Mr. Allen represents the Roxana in the Pecos county prorating program for equitable division of market outlet from Yates field.

* * *

Appointment of Baird H. Markham as assistant general manager of the Marland Oil Co., Ponca City, is a further promotion for an executive previously engaged largely in personal work. Before joining the Marland organization Mr. Markham was adjutant general of Oklahoma. He was in command of state troops in the period of martial law proclaimed by former Governor Walton before the Governor's removal in 1923.

* * *

Carroll H. Wegmann, chief geologist of the Pan American group companies, chose the thirteenth day of the third month of the year to hop off from New York City on the first continuous commercial airplane flight to Mexico City. He and his pilot stopped briefly in Houston the second day of the trip.

* * *

R. F. Imbt, west Texas division, chief geologist of the Pure Oil Co., and D. G. Dunbar, who headed the Pure's land and scouting work at San Angelo, resigned, effective April 1. They will devote time to individual royalty interests. Ford Turner, formerly of San Antonio, succeeds Mr. Dunbar and M. E. Roberts replaces Mr. Imbt.

* * *

Grant Emery, 70, of San Angelo, is described as probably the oldest active driller in the west Texas oil fields. His freinds say he "can make as much hole as anybody." He was educated for the priesthood, so the story goes, but oil claimed him.

* * *

H. K. V. Tompkins, general agent of Mexican Gulf Oil Co., has returned to Tampico headquarters after a business trip to Houston.

* * *

Walter Ritterbush and H. K. Greenleaf of the Phillips Petroleum Co's. land department have been transferred from Fort Worth to San Angelo, where they will make Texas headquarters. Mr. Ritterbush is in charge of land work there and D. E. Lounsberry heads Phillips geological work for west Texas.

* * *

F. J. Huffman of Pittsburgh offices of the Penn-Mex Fuel Co., and C. B. Turner of the parent South Penn Oil Co., have returned home after a visit to Tampico and Mexico City.

* * *

Will C. Hogg, Houston oil man and one of the largest royalty owners in Texas, has been awarded a "distinguished service medal" for civic work. The Houston Rotary club, which made the award, found him the individual who had "done the most for the community in the past year."

Oil Industry is Reviewed By Robert G. Stewart

GARDEN CITY, N. Y., March 29.—In "A Century of Industrial Progress," a volume just published by Doubleday, Doran & Co., is a chapter devoted to the petroleum age, written by Robert G. Stewart, president of the Pan-American Petroleum & Transport Co., a son of Robert W. Stewart, chairman of the board of the Standard of Indiana.

As the name suggests, the book is a review of progress during the past 100 years in various American industries. One chapter is devoted to agriculture, another to steel, lumber, ships and so on.

The oil chapter tells how petroleum was used before the days of Abraham for lighting, fuel and medicine, and brings the reader from the Persian temples on the shores of the Caspian Sea, where oil was used for religious ceremonies, down to the White House and President Coolidge's Oil Conservation Board.

Kerosene Consumption in 16 States in 1927

Among the 16 states reporting kerosene sales during 1927 and 1926 under inspection laws, nine showed increases, seven showed decreases in consumption. Largest gain was in Kansas with 6,278,000 gallons more reported sold in 1927. Louisiana showed the largest decrease, with a loss of 9,308,000 gallons.

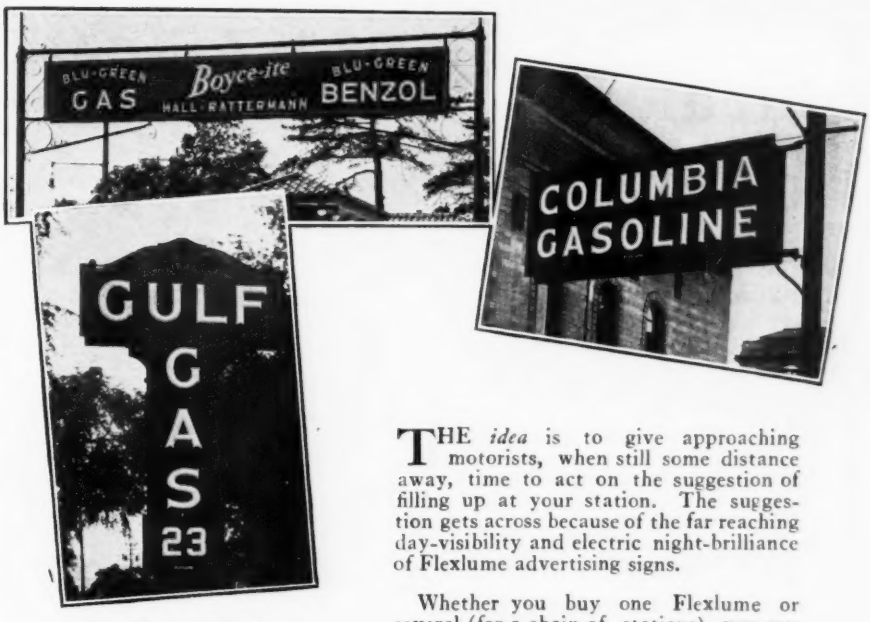
Kerosene consumption totals for the 16 states during 1927 and 1926 were:

States	1927	1926	% Change in 1927
Alabama	18,104,000	18,604,000	— 2.69
Arkansas	17,439,000	16,409,000	+ 6.28
Colorado	7,932,000	8,378,000	— 5.32
Florida	27,348,000	32,787,000	—16.59
Georgia	21,827,000	23,941,000	— 8.83
Indiana	5,603,000	5,255,000	+ 6.62
Kansas	51,781,000	45,503,000	+13.80
Louisiana	24,331,000	33,639,000	—27.67
Michigan	53,351,000	58,215,000	— 8.36
Minnesota	61,252,000	58,483,000	+ 4.73
Missouri	51,544,000	56,583,000	— 8.91
Nebraska	31,443,000	28,919,000	+ 8.73
No. Dakota	17,184,000	16,555,000	+ 3.80
Oklahoma	39,370,000	34,597,000	+13.80
So. Carolina	15,448,000	14,153,000	+ 9.15
South Dakota	16,414,000	14,646,000	+12.07

E. E. Greve, chief engineer of the Oil Well Supply Co., at Pittsburgh and E. R. Gnade, plant manager of the Imperial works of the same company, at Oil City, are in California making a survey of the different oil fields, their field trips being directed by Lester Keim, assistant general manager of the Los Angeles branch.

MICHIGAN CITY, Ind.—G. H. Kienitz, who has been in the grocery business for 30 years, has moved his store building away and is erecting a filling station.

This *"Idea"* Makes Gas Sales Grow



Sales and Service in Chief Cities of U.S. and Canada.

FLEXLUME

Factories also at Detroit, Los Angeles, Oakland and Toronto.

THE *idea* is to give approaching motorists, when still some distance away, time to act on the suggestion of filling up at your station. The suggestion gets across because of the far reaching day-visibility and electric night-brilliance of Flexlume advertising signs.

Whether you buy one Flexlume or several (for a chain of stations), you can be sure of building up more and more trade—a fact proved by the experience of hundreds of gas station owners. Let us submit, without obligation, color sketch and details of a Flexlume to fit your needs. Write FLEXLUME CORPORATION, 1770 Military Road, Buffalo, N.Y.

FLEXLUME ELECTRIC DISPLAYS

Heat Exchangers

M. W. KELLOGG CO.
7 Dey Street ~ New York

Kansas City, Mo. . . . . 700 Baltimore Ave.
San Francisco, Cal. . . . . 444 Market St.
Los Angeles, Cal. . . . 329 Petroleum Sec. Bldg.

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Your customers like the faster, more accurate service that Allison Coupon Books give. Simple, practical, always dependable. Furnished in stock or special designs. Send for samples and prices.

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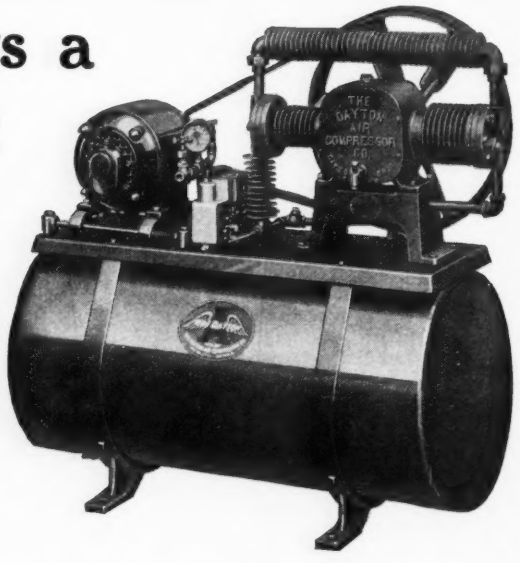


GONE are the days when compressors were bought and sold on the basis that the "free air" patron was influenced to buy gas and oil in quantities sufficient to pay for the air equipment.

NOWADAYS "AIR" HAS A CASH VALUE

There is paint spraying to be done, engines to be air cleaned, grease racks to be lifted and at least a dozen other uses for air which have a cash value. Yes, the air for the tires is still "free" but the same compressor is making money in other lines while it is inflating tires.

THE DAYTON G-8 IS THE MANY PURPOSE COMPRESSOR

It has a capacity of 9¼ cubic feet per minute operated by 2 H.P. Motor and has a 60 gallon tank. There are seven members of the "G" family. The smallest produces 2¼ cu. ft. of clean air per minute. Others up to 9¼ cu. ft.

ALL THE TROUBLE-MAKERS THROWN OUT

The Dayton Two-Stage models are the only two-stage compressors in the world built without connecting rod, crosshead pin, cotter pin or bolts. Nothing to score the cylinder or cause other trouble. Freedom from repairs is a feature enjoyed by 'Dayton' owners.

The LUCAS PUMP & TOOL COMPANY DAYTON, OHIO.

DAYTON AIR COMPRESSORS

425 Valley St. Dayton, Ohio

ADAMSON

WELDED TANKS

All Capacities-65 to 20,000 Gallons

ADAMSON MFG.CO. EAST PALESTINE O

N. P. N. Ownership Statement

Statement of the ownership, management, circulation, etc., required by the Act of Congress of August 24, 1912, of National Petroleum News, published weekly at Cleveland, Ohio, for April 1, 1928, State of Ohio, County of Cuyahoga.

Before me, a notary public in and for the State and County aforesaid, personally appeared A. W. Brobst, who, having been duly sworn according to law, deposes and says that he is the secretary of The National Petroleum Publishing Company and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, The National Petroleum Publishing Company, Cleveland, Ohio; editor, Warren C. Platt, Cleveland, Ohio; managing editor, V. B. Guthrie, Cleveland, Ohio; and business managers are: None.
2. That the owners are: Warren C. Platt, Cleveland, Ohio; Bess H. Platt, Cleveland, Ohio; V. B. Guthrie, Cleveland, Ohio; A. W. Brobst, Cleveland, Ohio; Wm. H. Little, Tulsa, Oklahoma.
3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of the total amount of bonds, mortgages, other securities are None.
4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holders appears upon the books of the company as trustees or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiants' full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.
5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise to paid subscribers during the six months preceding the date shown above is (This information is required from daily publications only.)

(Signed) A. W. BROBST, Secretary

Sworn to and subscribed before me this 20th day of March, 1928.

(Signed) H. L. RICHEY, Notary Public.

(My commission expires 5-7-30.)

DUNCAN, Okla.—Erle P. Halliburton, president of the Halliburton Oil Well Cementing Co., has added to the transportation equipment of his company a Lockheed monoplane, powered with Wright motor. It will be used in the business of the company, which extends over the Mid-Continent and Texas fields.

TULSA, March 29.—The Mid-Continent Oil & Gas Association has moved its offices to the third floor of the new Tulsa building. Former offices were in the Cosden building. The Tulsa building houses the Tulsa Club, the Natural Gas Association of America and a number of Tulsa civic organizations such as the Chamber of Commerce.

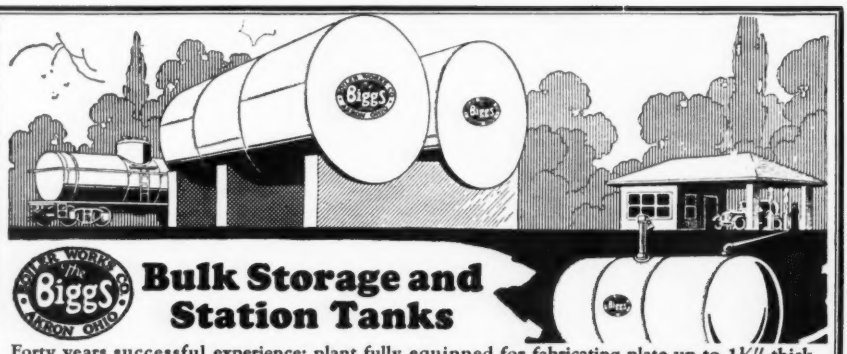
"Now our average sale is more than 5 gallons!"

A significant increase! Realized by many dealers who are using G & B Visible Pumps.

The motorist asks for only five gallons. Usually, after filling the order, the operator sees that the tank will hold one or two more. He suggests a full tank. The customer agrees. By means of the G & B Progressive Method of Delivery, the extra gallonage is delivered without delay.

Give your distributors, also, the opportunity to get this increased business which G & B Visible Pumps make possible. Bulletin T-176 describes the wet hose sight measure type; Bulletin T-179 the mechanical measure model. Write for either or both.

GILBERT AND BARKER
MANUFACTURING COMPANY
PUMPS AND TANKS FOR THE OIL TRADE
SPRINGFIELD MASS. U.S.A.



Bulk Storage and Station Tanks

Forty years successful experience; plant fully equipped for fabricating plate up to 1½" thick.
Pressure Stills for Cracking Process - Fractionating Towers - Dephlegmating Towers, Bubble Towers - Heat Exchangers - Agitators - Steam Stills - Crude Stills - Condenser Boxes, Run Down Tanks - Blending Tanks - Hemispherical Tanks - Blow Cases - Acid Tanks, Compounding Kettles - Storage Tanks to 80,000 Barrels - Smoke Stacks and Breechings, etc.

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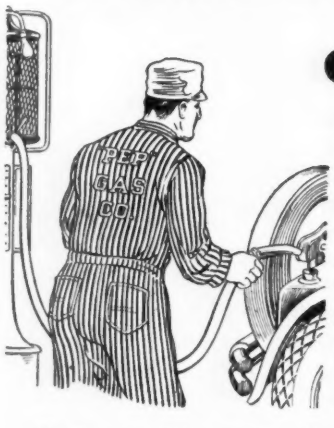
Gasoline And Other Motor Fuels

by Ellis and Meigs, is a book which gives a complete survey of the field and a description of practically every process of making gasoline and most other motor fuels of promise or prominence.

The price of the book is $10. Just send us your check and we will mail a copy of it to you.

National Petroleum News, 1213 W. Third St., Cleveland, Ohio

That impression of efficiency



When motorists drive up to your filling station are they served by neat appearing attendants?

Add to your service that one touch that makes it complete. Have your men uniformed — "Well dressed for work."

Standard Work Garments are made of the finest materials — triple stitched and reinforced — made to look right and wear right.

Standard Work Garments

$3.25 each

15% off in dozen lots. Special Prices in larger quantities.

Choice of blue denim, white, hickory stripe, express stripe, fancy blue and gold stripe. Union Made. Name or trade-mark embroidered in fast colors for 25c per garment.

The Standard Garment Co.

Toledo, Ohio

Mrs. Hancock Resigns As Dixie Executive

MRS. NORMA M. HANCOCK

She has resigned as vice president of the Dixie Oil Co., a subsidiary of the Standard Oil Co. of Indiana. Mrs. Hancock rose to the highest position ever held by a woman in a Standard Oil organization

HOUSTON, March 30.—Mrs. Norma M. Hancock has resigned as vice president of the Dixie Oil Co., Inc., producing subsidiary of the Standard Oil Co. of Indiana. She is succeeded by A. W. Peake, formerly production head of the Midwest Refining Co., another subsidiary, at Casper, Wyo.

Mrs. Hancock had served as an oil industry executive for 11 years. She was known as the only woman to reach a similar ranking position in a Standard company, if not any operating unit of like magnitude in the industry. Mrs. Hancock retains the presidency of the Omega Oil Co., a mineral and royalty holding subsidiary of the Dixie.

Mrs. Hancock entered the petroleum industry in 1917, at which time she was private secretary to Fred H. Wickett, then president of a small producing company operating as the Dixie in the Pine Island division of the Shreveport district. Later, the Dixie was acquired by the Standard of Indiana, and its operations in southwestern fields expanded.

Mr. Wickett continued in an executive capacity with the Standard of Indiana and headed the Pan American group companies as chairman of the board of directors after stock control had been acquired by the Standard of Indiana. Mrs. Hancock continued as virtual operating head of the Dixie, with Shreveport headquarters.

Election of Mr. Peake to succeed Mrs. Hancock is believed to be a move on the part of the Standard to consolidate producing activities of its various subsidiaries.

New Equipment to Improve Plants

Personal Notes of the Manufacturers

National Petroleum News

International Derrick & Equipment Co., Columbus, O., has just completed a shop bui'ding 90 feet long which will house the standard steel building department. Demand for additional space by this department forced the company to build a wing addition for the shop itself and also to turn over to this department the buildings formerly occupied by the forge and blacksmith shops. The company has built several new buildings during the past year, including an office building, machine shop, and wheel fabrication shop.

The company has recently developed sectional belt and engine houses, which are adapted to all makes of steel or wooden rigs. They are light, portable structures made in standard sizes. Ready portability, ease of erection and fire and rust resisting qualities are claimed to be the features of these houses.

* * *

Truscon Steel Co., Youngstown, O., through its president, Julius Kahn, has announced the appointment of three vice presidents. They are:

C. I. Auten, in charge of sales in the standard building division; M. T. Clark, in charge of sales of the steel window division; and C. D. Loveland, formerly manager of the Pittsburgh district, in charge of distribution in New Jersey, with headquarters at Newark, N. J.

* * *

The Brown Instrument Co., Philadelphia, Pa., has moved its Detroit offices to larger quarters at 576 Maccabee Eldg. R. W. Mayer is district manager.

* * *

Automobile Rotary Lift Co., Memphis, Tenn., has placed on the market recently a new rotary lift of the free wheel type, of all steel and malleable construction. It is constructed of 6 inch ship channel beams whieh are equipped with detachable and adjustable front and rear supports of malleable iron. The platform is designed to permit the free movement of workmen between the wheels and the supporting beams. It weighs 1150 pounds.

An improved model of the drive-on type of rotary lift is also announced.

* * *

Oil Conservation Engineering Co., 877 Addison road, Cleveland, O., announces that W. H. McGunagle has been made Mid-Continent sales representative for the company with offices at 417 South Boulder st., Tulsa. J. A. Stough who for the past six years has represented Oceco in the Mid-Continent territory has found it necessary to devote all of his time to the Stough Tank Erecting Co. of which he is president. Mr. McGunagle has for the past five years been connected with the home office of the Oil Conservation Engineering Co. in Cleveland.

* * *

Fleckenstein Visible Gasometer Co. of Grand Rapids, Mich., was purchased on March 5 by new interests and is now known as the Fleckenstein Pump Co., according to Russell L. Edison, general manager. The new company is a partnership composed of George E. Nichols, Ionia, Mich., John F. Wagner, Grand Rapids, C. F. Adamson, East Palestine, O., and Mr. Edison.

* * *

Campbell Engineering Co., Short Hills, N. J., announces a new device for automatically regulating steam flow. The controller consists essentially of a flexible combination of receiver, calibrated nozzles and recording or indicating instruments. These are said to be rugged and easily installed. It is protected by patent application.

* * *

Paige & Jones Chemical Co., Hammond, Ind., manufacturer of water softeners, announces that it has taken from the Permutit Co., New York, a license to manufacture and sell industrial zeolite water softeners of the upflow type. The agreement became effective March 15 and provides that customers who have bought zeolite systems from Paige & Jones are safe in using them. The agreement follows extensive litigation of patents owned by the Permutit Co., particularly Gans patent No. 1,195,923, covering apparatus for softening water by the use of zeolites.

* * *

The Hays Corp., Michigan City, Ind., announces a new portable combustion test set for service men, combustion engineers, oil burner dealers and others interested in quick determination of boiler efficiency and cause and location of boiler trouble. The test set consists of a flue gas analyzer, flue gas thermo gage and draft gage, compactly arranged in an oak carrying case.

* * *

Naylor Spiral Pipe Co. announces that Naylor pipe with grooved ends for Victaulic couplings is now available in sizes up to 12-inch.

TRIPLEXD
GASOLINE HOSE

All sizes and lengths of Triplexd Hose are carried in stock in these cities:

LOUISVILLE:
664 South Second Street
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JACKSONVILLE:
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RICHMOND: P. O. Box 514
BROOKLYN: 236 Tillary St.
BOSTON: 142 Berkeley St.
PITTSBURGH:
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CLEVELAND: 4336 Broadway
CINCINNATI:
450 East Pearl Street
DETROIT:
5459 Grand River Avenue
ST. LOUIS: 1621 Pine Street
KANSAS CITY:
13th Street and Eastern Ave.
CHICAGO:
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Important Oil Articles Briefed, Indexed

THE new summarizing and indexing service which NATIONAL PETROLEUM NEWS has inaugurated for its readers, includes also summarizing of important articles issued by many outside organizations which are conducting research work in oil problems.

These organizations are listed below and the scope of their work given briefly.

This new service has been designed to give NATIONAL PETROLEUM NEWS readers quick reference to current articles or bulletins on developments in either production, refining, natural gasoline manufacturing or marketing, after the issue containing the article, or reference to it, has been filed away.

It starts with the summaries which appear on this and accompanying pages. Of course, important articles appearing in NATIONAL PETROLEUM NEWS are included in these summaries, which will be published regularly in each issue.

They will be published in such form that can be clipped and pasted on a three-by-five ordinary filing card.

These summaries each carry an index number in the upper right-hand corner.

By the use of an index book prepared by Prof. L. C. Uren, head of the petroleum engineering department of the University of California, the card containing a reference to any particular article on any subject can be found in a jiffy.

This book has been published by NATIONAL PETROLEUM NEWS. It sells for $1 and can be obtained only through this publication.

The reader can clip and file, by card, summaries of articles on whatever phase of oil industry development he is interested in.

He can clip and file all the summaries which will give him, at the expense of only a few moments' work each week, a quick reference to new developments in all branches of the oil industry.

He can expand his reference system as much as he pleases by making his own abstracts of other articles, indexing them by means of the index book.

Details as to how to use the abstracting and indexing system are fully explained in an article in the book itself.

The twelve organizations whose publications on new oil development are to be abstracted in NATIONAL PETROLEUM NEWS regularly, in addition to articles from its own news columns, are:

American Petroleum Institute—Papers describing new production refining and marketing practices delivered at its meetings. Bulletins describing progress in technical work carried on under A.P.I. auspices.

U. S. Bureau of Mines—Bulletins giving results of research and experiments in production and refining methods. Surveys of distribution of oil products.

U. S. Geological Survey and state geological surveys—Geological reports on new fields.

American Institute of Mining and Metallurgical Engineers—Papers on important production and refining developments and economics of the oil industry.

American Association of Petroleum Geologists—Papers on new trends in geological research and on underground conditions in important fields.

California State Mining Bureau—Description of new field methods.

Other associations whose proceedings and transactions will be watched for important developments relating to oil are:

Institute of Petroleum Technologists, London, American Natural Gas Association, American Chemical Society, American Society of Mechanical Engineers, American Society of Civil Engineers, American Society of Automotive Engineers, American Institute of Electrical Engineers.

SELECTED BIBLIOGRAPHY ON PETROLEUM TECHNOLOGY

Editor's Note—The brief abstracts of current literature printed below are so arranged that they may be cut apart and mounted on 3" x 5" library indexing cards. The indexing numbers assigned bring the cards into logical sequence in the files. An index book gives the key to the articles.

National Petroleum News **961.12**

"Station Windows as Silent Salesmen: Expert Tells How to Dress Them"

March 14, 1928, p. 33-35.

This article describes what has been done by Pure Oil Co., Standard Oil Co. of Indiana, and other oil companies in the use of window display space at filling stations to aid in merchandising of packaged goods. Contains interview with expert store window dresser who gives practical ideas oil companies might use.

Uren, L. C. **514.3**

"Application of Power in the Operation of Oil Plunger Pumps," Part 1

National Petroleum News, March 7, 1928, p. 67-80.

One of series of articles on principles of operation of oil-well plunger pumps. Descriptions presented, accompanied by photographs and drawings, of various appliances and devices useful in balancing the loads on the power transmission mechanism, and in securing a longer stroke of more uniform velocity. The article says use of these devices indicates they afford a means of reducing power consumption and diminishing rod difficulties. Also, by maintaining wells in operation for a greater percentage of the time and permitting lifting of fluids at a higher daily rate, their use results in a more rapid rate of oil recovery, and probably in greater ultimate recovery.

De Florez, Luis **740.**

"Physical Control of Refining Operations, Urgent Need of Future"

National Petroleum News, Feb. 22, 1928, p. 49-55, as presented before Petroleum Division, A. I. M. E., New York, Feb. 22-23, 1928.

Two main functions to be performed, one is measuring operating conditions and detecting their change and the other is applying corrective changes, the author, a consulting engineer, brings out. Examination of the product is useless, he says. It is then too late to apply corrective changes. Simplicity of any control system is desirable. Various factors to be considered in connection with instrumental control of refining processes and methods of applying them are discussed.

Swigart, T. E. **514.**

"Advances of A. P. I. Standard Pumping Equipment"

American Petroleum Institute Bulletin, Vol. 9, No. 7, Jan. 31, 1928, 19 p., including plates.

Comparisons are made of A. P. I. equipment with old style tubing, sucker rod joints, and pump parts. Charts of important dimensions are reproduced, illustrating simplification by adoption of A. P. I. designs for the foregoing and miscellaneous other items of equipment. Supporting data is given to show that standard equipment has the advantages, both of simplicity and interchangeability; and, moreover, represents the best principles of engineering design that could be developed through combined efforts of oil operators and supply manufacturers.

Emig, Frank H. **940.5**

"Cost Finding Methods for Marketers and How to Use Them" Art 1

National Petroleum News, p. 66-67, March 14, 1928.

First article in series of six written by an oil company accountant and business systematizer giving forms for complete daily reports from service stations. Explanatory text tells importance to oil company of keeping accurate cost finding system.

Miller, H. C. 934.31

"Safe Practices at Oil Derricks"

U. S. Bureau of Mines Technical Paper 419, 69 p., December, 1927.

This paper, one of a series on safety work in the oil industry, begins with discussion of traveling equipment in the derrick, discussing safe and unsafe practices and the state laws on installation. It includes detailed discussion with illustrations of safety methods with reference to pipe tools, belts and wire lines, hand tools, boilers and fire hazards. There are chapters devoted to drilling wells and to pumping and pulling wells, to the use of mud fluid and cement, eye accidents and personal cleanliness, all from the safety standpoint. It contains several original suggestions for improvement of practices. The contractor, the driller and the superintendent, as well as the safety engineer, will profit by its reading. Sold by Superintendent of Documents, Washington, D. C., for 15 cents.

Stratford, C. W. 720.1

"The Shell Still, Inside or Outside Fired, As a Big Volume Distilling Unit," Part 1

National Petroleum News, Feb. 29, 1928, p. 63-66, as presented before the Petroleum Division, A. I. M. E., New York, Feb. 22-23, 1928.

The author discusses work done at the plant of Associated Oil Co. in California in which shell stills, through the installation of centrifugal pumps, motor driven, inside the stills to provide high velocity circulation of oil, were given capacity of as high as 9,000 or 10,000 barrels a day each.

Bauer, C. Max 533.

"Gas a Big Factor in The Texas Panhandle"

Bulletin of American Association of Petroleum Geologists, Vol. 12, No. 2, 11 p.

The chief geologist of the Midwest Exploration Co. declares the importance of gas conservation in the broadly termed Amarillo district hardly can be over-estimated. It is declared the amount of gas now produced will deplete the field in 24 years; also, because the granite wash pay horizon and the dolomite are in communication, whatever affects the gas will affect the oil in the connected reservoirs. Ultimate production of oil is shown to be increased by conserving gas pressure. (Cross index under 305.111.32 and 974.2)

Bell, H. S. 734

"Pipe Still-Tower Design Can Be Fitted to Many Purposes in Refinery"

National Petroleum News, Feb. 29, 1928, p. 97-108, as presented before meeting of the Petroleum Division, A. I. M. E., New York, Feb. 22-23, 1928.

The author, a consulting engineer, discusses at length the possibilities of adaptation of pipe stills to various uses on various crudes, ranging all the way from Pennsylvania to Smackover, with graphs, flow charts and photographs showing specific installations.

National Petroleum News 911.111.32

"Seminole District's Total Yield 157 Million Barrels"

March 14, 1928, p. 126-134.

Includes chart showing weekly average production of five Seminole pools from start to Feb. 1, 1928. Also includes detailed tables by individual pools giving production Feb. 1 by leases by companies; also number of wells producing, acres developed, gross production to Feb. 1 and recovery per acre.

Palmer, R. H. 305.111.63

"Geology and Petroleum Possibilities of Olympic Peninsula, Wash."

Bulletin of American Association of Petroleum Geologists, Vol. 11, No. 12, 17 p.

Oil possibilities are described as worthy of investigation and test wells are proposed in an area where the lower shale member of the Miocene beds contains many gas, and two oil, seeps. Extensive forests, logged-over areas, glacial drifts and scarcity of roads hinder geological investigations of the area. The geological column is limited to the Oligocene, Miocene, Pleistocene and possibly Eocene beds.

Phillips, Ernest B. and Miller, Albert E. 740.

"Technical Control of Refinery Processes," Part 1

National Petroleum News, Feb. 29, 1928, p. 76-80, as presented before the Petroleum Division, A. I. M. E., New York, Feb. 22-23, 1928.

Whereas de Florez deals with physical control of refining processes by means of control of heat, pressure and other conditions, these authors are talking about the technical staff of the refinery keeping a check on the operating staff to see that proper yields are obtained in each operation in the refinery and that the products are of proper quality.

National Petroleum News 913.12

"Natural Gasoline Production of U. S. Increased 20 Per Cent in 1927"

Issue March 21, 1928, p. 25-26.

Rate of increase in output of natural gasoline in 1927 compared with rate of increase in refinery gasoline. Comparative production from various districts is given. Production in Seminole district in Oklahoma discussed in detail. Accompanying chart shows relationship of natural gasoline output to total gasoline supply from 1920 to 1927, and relationship of price of Grade A to price of 58-60 U. S. motor. Another chart shows composition of nation's gasoline supply from 1918 to 1927.

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control of gas
volume for
gas-lift wells

The Thomas Gas Lift Control is an automatic, positive regulator which controls the volume of gas admitted to a gas-lift well directly as the pressure in the well varies.

It requires no attention nor adjustment; it prevents gas wastage due to unevenness in well pressure. It is in use on a large number of gas-lift wells, and has been tested and proven in actual service over a long period. It will save money for *you*.
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GAS LIFT CONTROL

NATURAL GAS EQUIPMENT CO.

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Tret-O-lite
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No. 369—A compact outfit. Folio made from heavy 5-oz. smooth black cowhide, with 5¾-inch over-all expansion and three inner pockets. Inner case contains six 4-oz. bottles, displayed on a background of red velvet. Each bottle is partitioned separately. Case also contains five grease jars.

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NATIONAL PETROLEUM NEWS

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Name .....

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ON THE LAZY BENCH

National Petroleum News

Tommy entered the parlor, where his sister was entertaining Mr. Dubleigh. Walking up to the latter, he held out his hand, in the open palm of which were a dozen small white objects.

"What's them?" he asked.

"Why, those are beans," answered Dubleigh with an ingratiating smile.

"He does know 'em sis," said Tommy triumphantly to his sister. "You told ma last night that he didn't."

—*Stanolind Record.*

* * *

"Are you a college graduate?"

"No, I slept in this suit last night."

—*Barnsdall.*

* * *

"Would you mind getting up for just a minute, miss?"

"Why?"

"I want to hang up this notice, 'Wet Paint.' "

—*Barnsdall.*

* * *

"Are you sure you have shown me all the principal parts of this car?" asked the fair prospective buyer.

"Yes, madam, all the important ones," replied the salesman.

"Well, then, where is the depreciation? My husband told me that was one of the biggest things about a car."

—*Stanolind Record.*

* * *

Freshman—"Is she very pretty?"

Sophomore—"Pretty! Say, when she gets on a car the advertising is a total loss!"

—*Skelly News.*

* * *

Fresh: What a fine statue that is! It's alabaster, isn't it?

Soph: No, that's Aphrodite.

—*Stanolind Record.*

* * *

She—"The Lord made us beautiful and dumb."

It—"How's that?"

She—"Beautiful so the men would love us—and dumb so that we could love them."

—*Barnsdall.*

* * *

Jones—"That girl is wearing the last word in bathing suits."

Smith—"Well, if the police ever catch her, it will be a sentence."

—*Skelly News.*

* * *

Wife: "I think I hear burglars. Are you awake?"

Husband: "No."

—*Stanolind Record.*

Doctor—I hardly like to mention it, but that cheque you gave me has—er come back.

Patient—That's funny, doctor—so have all my symptoms!

—*Skelly News.*

* * *

"Well, dearie, all the years have flitted by—and I haven't deceived you yet, have I?"

"No—you haven't deceived me—but heaven knows you've tried hard enough."

—*Barnsdall.*

* * *

"Did Jones ever do anything startling?"

"Yes, indeed! He once appeared from an upper berth fully dressed."

—*Stanolind Record.*

* * *

Angry customer in restaurant—"Hey, I've found a tack in this doughnut!"

Waiter—"Why the ambitious little thing! It must think it's a tire."

—*Barnsdall.*

* * *

The first day of school the primary teacher was questioning the little pupils as to their knowledge so as to properly classify them.

Teacher—"Johnny, do you know your A B C's?"

Six-year-old Johnny—"Hell, no, I've only been here half an hour."

—*Skelly News.*

* * *

She—"What do you know about love?"

He—"Plenty; I drove a taxi for three years."

—*Barnsdall.*

* * *

Professor—"What is the penalty for bigamy?"

Law Student—"Two mothers-in-law."

—*Skelly News.*

* * *

My wife's made an awful discovery,
And you'll agree it's the worst;
She's learned I get paid on the 15th,
The same as I do on the first.

—*Barnsdall.*

* * *

Negro—"What you all mean, the bank is busted?"

Teller—"Well, it is, that's all; it's busted—didn't you ever hear of a bank being busted?"

Negro—"Sho, but I nevah had one bust right in mah face befoh."

—*Skelly News.*

Refinery - Tank Wagon Markets

National Petroleum News

Demand and Price Improve for Gas Oil, Light Oil, Natural Gasoline

Staff Special

TULSA, March 31

GENERAL improvement in demand and fractional increases in price for the more wanted grades of gasolines and kerosenes were the Mid-Continent refinery market features the last week in March.

Fuel oils generally were unchanged in price. Buying for April delivery was brisk at present price levels. Distillates are virtually at the close of their season and demand has dropped.

Gas oils have been in active demand the past several days. Prices have moved up. Buyers report more difficulty obtaining goods than at any time in the past several weeks.

Natural gasolines broke partly out of the slump they have been in all month. The break came late in the week.

Exporters were active. Most of the week their offers for gasolines failed to tempt refiners. Only small lots of the higher gravities were bought.

One export purchase of over 500,000 gallons of U. S. Motor gasoline was placed. The price was not revealed. Sales of 61-63, 390 end point gasoline, and 64-66, 375 e. p. gasoline also were reported at 6.75 and 7 cents respectively. The total gallonage was not announced.

Two export buyers were reported to have withdrawn from the market as they were convinced that only small lots of gasoline could be bought at prices they were instructed to pay.

One export company, which has been setting the pace for purchases, advanced offers Saturday for 64-66, 375 e. p. gasoline from 7 cents to 7.125 cents a gallon, f.o.b. north Texas plants. This advance failed to bring in any business prior to the end of the week. Efforts to obtain options at 7.25 cents a gallon for shipment the latter half of April also proved fruitless.

Domestic demand for gasolines has improved. Shipments have remained at relatively high levels the past two weeks. Indications Saturday were that the last week in March would be another high shipment mark for the year.

Refiners making naphthas advanced prices .125 to .375 cent, keeping pace with the general advance of other grades. Demand for 450 end point gasolines was better, the few refiners making these cuts reported. There was a slight price advance.

Price of 58-60 U. S. Motor gasoline Saturday was 6.50 to 6.75 cents a gallon, a majority of the trade said. Virtually all quotations at less than 6.50 cents either had been withdrawn during the week or the goods had been purchased quickly.

The north Texas refiners, except within their immediate territory, are out of the picture for most of April on U. S. Motor gasoline. A few refiners continue to make some U. S. Motor. The majority are busy filling export orders for higher gravity gasolines. The few who are making U. S. Motor already have sold a good percentage of their April production.

One large company Friday bought a quantity of U. S. Motor at 6.50 cents a gallon for delivery over the month. Another large company was expected to buy some goods early next week.

Kansas refiners have enjoyed a good gasoline business. Prices have advanced 0.125 to 0.25 cent a gallon.

An Arkansas refinery sales manager Saturday said he was carrying over into April more business than he had from one month to the next in the past seven or eight months. Another Arkansas refiner is shipping a quantity of gasoline for export. His Arkansas business has increased to the extent that he has had to cease moving domestic gasolines outside the state.

Virtually the same situation prevails in north Louisiana. Prices in both Arkansas and Louisiana have advanced .25 cent a gallon this week.

Buyers have been active in kerosenes, both for prompt and over the month shipment. Exporters also have bought approximately 1,000,000 gallons of prime white and have sent out inquiries for more of the same grade. There has been a general advance in prices in the whole Mid-Continent.

Price of 41-43 water white kerosene in Group 3 moved up to 4.50 cents a gallon during the week, as compared with 4.25 to 4.50 cents March 24. Some of the buying was reported done by resale agents who were covering on short sales.

Demand for kerosene has been good in north Texas. Production has been relatively higher than in Oklahoma due to refiners cutting a considerable quantity of kerosenes when making export gasolines. Kerosene prices accordingly have not moved up as rapidly as in Oklahoma.

Kerosenes are reported scarce in Arkansas and Louisiana. The largest maker of kerosene in Arkansas is reported sold up for the next few days. Only one plant makes any quantity of kerosene in north Louisiana and is reported behind on shipments.

Kansas refiners as a rule make but little kerosene and have no difficulty moving their production.

Prices were advanced generally in Kansas Saturday .125 cent, the range for 41-43 w.w. grade being 4.875 to 5.125 cents a gallon.

Industrial gas companies and refiners have bought large quantities of gas oil the past few days. Price of 32-36 gas oil, U. G. I. specifications, has moved to 2.625 cents a gallon. Buyers report some difficulty finding any quantity of goods even at that figure.

Refiners who have gas oil in storage and who also have cracking units have been reluctant to sell.

Quotations for fuel oils for deferred shipment have been generally in line with spot market prices. Inquiries for April shipment have been as good, if not better, than for March. Buying also has been considered by a majority of refiners as satisfactory so far for April.

Only small lots of low gravity fuel oil were obtainable Saturday under 80 cents a barrel. Quotations on 22-26 fuel was 82.5 to 85 cents from most refiners. The 24-26 fuel oil

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices Apr. 2	Prices Mar. 26	Prices Mar. 19
52-54 Naphtha	7.75 – 8.25	7.625– 8.25	7.50 – 8.50
54-56 Naphtha	7.75 – 8.50	7.75 – 8.50	7.75 – 8.50
58-60 U.S. Motor 437 e.p.	8.50 – 8.75	8.00 – 8.50	8.00 – 8.25
58-60U.S.Motor(Ohiodes.)	8.25 – 8.50	.....	.....
60-62 400-410 e.p. gasoline	9.00 – 9.50	8.75 – 9.50	8.75 – 9.25
64-66 390 e.p. gasoline	9.50 –10.25	9.50 –10.00	9.00 – 9.50
68-70 Str.-run gas. 350-360 e.p.	10.50 –11.50	10.25 –11.25	9.75 –10.75
OKLAHOMA			
48-50 450 e.p. naphtha	†6.00 – 6.25	†5.875– 6.00	†5.75
50-52 450 e.p. naphtha	†6.00 – 6.25	†5.875– 6.00	†5.75
56-58 450 e.p. gasoline	**6.00 – 6.25	**6.00	**5.875– 6.00
58-60 450 e.p. gasoline	**6.25	**6.00 – 6.125	**6.00
64-66 390 e.p. gasoline	6.75 – 6.875	6.75	6.625– 6.75
68-70 350-360 e.p. gasoline	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
OKLAHOMA (Weighted Average Prices)			
58-60 U. S. Motor, 437 e.p.	6.4871	6.3825	6.3643
60-62 437 e.p. gasoline	6.7721	6.6188	6.7293
60-62 400 e.p. gasoline	6.7188	6.7500	6.7625
64-66 375 e.p. gasoline	.....	7.1250	7.0750

Above are weighted average prices, current week's prices being effective on Saturday, instead of Monday, the last day on which weighted averages are available for publication in this table. Weighted average prices for the current Monday are published on page 37 of this issue. The two previous week's prices shown are corrected to show Monday's prices, effective on the dates shown at the top of the columns.

KANSAS* (F O B. refinery Kansas destination)			
58-60 U.S. Motor 437 e.p.	6.75 – 6.875	6.75	6.50 – 6.625
60-62 400 e.p. gasoline	7.125– 7.25	6.875– 7.00	6.75 – 6.875
64-66 375 e.p. gasoline	7.50	7.375	7.375
NORTH TEXAS			
48-52 450 e.p. naphtha	†6.00 – 6.125	†5.75 – 5.875	†5.75
56-58 450 e.p. gasoline	†6.00 – 6.125	†5.875	†5.75 – 5.875
58-60 450 e.p. gasoline	†6.125– 6.25	†6.00	†5.875
58-60 U.S. Motor 437 e.p.	6.50	†6.25 – 6.375	†6.00 – 6.25
60-62 400 e.p. gasoline	6.75	6.375– 6.50	6.25 – 6.375
64-66 390 e.p. gasoline	6.75 – 7.00	6.75	6.50 – 6.625
64-66 375 e.p. gasoline	7.00 . 7.25	7.00 – 7.125	6.75 – 6.875
68-70 350-360 e.p. gasoline	7.125– 7.25	7.125– 7.25	7.125– 7.25
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	6.75 – 7.25	6.625– 6.75	6.50
ARKANSAS (Arkansas destination only)			
56-58 450 e.p. gasoline	6.25 – 6.50	6.25 – 6.50	6.25
58-60 450 e.p. gasoline	6.25 – 6.50	6.25 – 6.50	6.25
58-60 U.S. Motor 437 e.p.	6.75	6.75	6.50
CALIFORNIA			
*54-58 U.S. Motor 437 e.p.	7.50 – 9.00	7.50 – 8.50	7.00 – 8.50
*58-60 U.S. Motor 437 e.p.	8.50 –10.00	8.50 –10.00	8.25 –10.00
*42-45 Eng. dis. 445-480 e.p.	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00

*3c tax to be added if used in state.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Since Oct. 1, 1927 naturals must pass corrosion test.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery	4.00 – 4.25	4.25	**4.625– 4.75
Grade A, 72-79.9, 90% Recovery	4.375	**4.50	**4.875– 5.00
Grade BB, 84-92, 85% Recovery	3.375– 3.50	**3.50	**3.875– 4.00
Grade B, 76-83.9, 85% Recovery	3.75 – 3.875	**3.75 – 4.00	**3.875– 4.00
Grade C, 80-90, 78% Recovery	3.25	**3.25	**3.625
NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery	**4.125– 4.375	4.25 – 4.50	**4.875– 5.00
Grade A, 72-79.9, 90% Recovery	**4.125– 4.375	4.25 – 4.50	**4.875– 5.00
Grade BB, 84-92, 85% Recovery	**3.50 – 3.625	**3.50 – 3.625	**4.00
Grade B, 76-83.9, 85% Recovery	**3.50 – 3.625	**3.50 – 3.625	**4.00
Grade C, 80-90, 78% Recovery	**3.25	**3.25 – 3.375	**3.625– 3.75
NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA	†4.625– 4.75	†4.75	†5.50
Grade BB	†3.875– 4.00	†3.875– 4.00	†4.50
Grade C	†3.625– 3.75	3.75	†4.375– 4.50
CALIFORNIA			
75-85, 375-390 e.p. blend	8.50 – 9.00	8.00 – 8.50	8.00 – 8.50

MOTOR FUEL BLENDS

PENNSYLVANIA			
68-70 Blend 437 e.p.	Prices	.....	.....
64-66 Blend 437 e.p.	temporarily	.....	.....
60-62 Blend 437 e.p.	discontinued	.....	.....
OKLAHOMA			
64-66 Blend 437 e.p.	†6.125– 6.375	†5.875– 6.25	†5.875– 6.25

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene	6.125– 6.50	6.125– 6.375	6.125– 6.50
46 w.w. kerosene	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75
47 w.w. kerosene	6.75 – 7.25	7.00	6.75 – 7.25
300 mineral seal	7.00 – 7.25	7.25 – 7.50	7.25 – 7.50
OKLAHOMA			
41-43 w.w. kerosene	4.50	4.25 – 4.50	4.25 – 4.50
42-44 w.w. kerosene	5.00	4.75 – 4.875	4.75

	Prices Apr. 2	Prices Mar. 26	Prices Mar. 19
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	4.875– 5.125	4.75 – 5.00	4.75 – 5.00
42-44 w.w. kerosene	5.50 – 5.625	5.50 – 5.625	5.50 – 5.625
NORTH TEXAS			
40-42 w.w. kerosene	†4.125	†4.125	†4.125– 4.25
41-43 w.w. kerosene	†4.375– 4.50	†4.25 – 4.375	†4.375
NORTH LOUISIANA (N. La. Ark. and Miss. destination)			
41-43 w.w. kerosene	4.875– 5.00	4.75 – 5.00	4.75
ARKANSAS (Arkansas destination only)			
42-44 kerosene	5.00 – 5.25	5.00	4.75 – 5.00
CALIFORNIA			
38-40 w.w. kerosene	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50

NEUTRAL OIL

PENNSYLVANIA Vis.			
	(Viscosity at 70°F.)		
200 No. 3 Assoc. Filt.	33.00 –33.50	33.00 –33.50	33.00 –34.00
180 No. 3 Assoc. Filt.	30.00 –31.25	30.00 –31.25	30.00 –32.00
150 No. 3 Assoc. Filt.	27.00 –27.50	26.50 –27.50	27.00 –28.00
	(Non Viscous)		
34 Grav. 330-340 Flash	7.00 – 8.00	7.00 – 8.00	7.25 – 8.00
36 Min. Neut. 300-305 Flash	6.00 – 7.50	6.00 – 7.50	6.50 – 7.50
**OKLAHOMA Vis. Color	(Viscosity at 100°F.)		
100—No. 2	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
150—No. 3	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
150—No. 4	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180—No. 3	9.00 –10.00	9.00 –10.00	9.00 –10.00
180—No. 4	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
180—No. 5	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
200—No. 3	9.50 –11.00	9.50 –11.00	9.50 –11.00
200—No. 4	9.50 –10.75	9.50 –10.75	9.50 –10.75
200—No. 5	8.50 –10.50	8.50 –10.50	8.50 –10.50
220—No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220—No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240—No. 3	13.50 –14.00	13.50 –14.00	13.50 –14.00
240—No. 4	13.25 –13.50	13.25 –13.50	13.25 –13.50
240—No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
280—No. 3	15.50 –16.50	15.50 –16.50	15.50 –16.50
280—No. 4	15.25	15.25	15.25
280—No. 5	14.00 –15.00	14.00 –15.00	14.00 –15.00
300—No. 5-6	17.00	17.00	17.00
**GULF COASTAL Vis. Color	(Viscosity at 100°F., pour test 0)		
100—No. 2 Unfilt. Pale	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
200—No. 3 Unfilt. Pale	9.50 –10.25	9.50 –10.25	9.50 –10.25
300—No. 3 Unfilt. Pale	10.50 –11.25	10.50 –11.25	10.50 –11.25
500—No. 3½ Unfilt. Pale	12.50 –13.25	12.50 –13.25	12.50 –13.25
750—No. 4 Unfilt. Pale	14.50 –15.50	14.50 –15.50	14.50 –15.50
200—No. 5½ Red Oil	7.50 – 8.25	7.50 – 8.25	7.50 – 8.25
300—No. 5½ Red Oil	8.75 – 9.25	8.75 – 9.25	8.75 – 9.25
500—No. 6 Red Oil	10.00 –10.50	10.00 –10.50	10.00 –10.50
750—No. 6 Red Oil	12.75 –13.50	12.75 –13.50	12.75 –13.50
**CALIFORNIA Vis. Color	(Viscosity at 100°F.)		
100—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3	11.50 –12.00	11.50 –12.00	11.50 –12.00
300—No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
450—No. 3	15.50 –16.00	15.50 –16.00	15.50 –16.00
550—No. 3	16.50 –17.00	16.50 –17.00	16.50 –17.00
600—No. 3	17.00 –17.50	17.00 –17.50	17.00 –17.50
200—No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
300—No. 5	12.00 –12.50	12.00 –12.50	12.00 –12.50
400—No. 5	14.00 –14.50	14.00 –14.50	14.00 –14.50
500—No. 5	15.00 –15.50	15.00 –15.50	15.00 –15.50
600—No. 5	16.00 –16.50	16.00 –16.50	16.00 –16.50
700—No. 7	18.00 –18.50	18.00 –18.50	18.00 –18.50

CYLINDER STOCKS

OKLAHOMA			
190-200 Vis. at 210° Brt. St.	31.00 –32.00	31.00 –32.00	31.00 –32.00
150-160 Vis. at 210° Brt. St.	21.00 –24.00	21.00 –24.00	21.00 –24.00
600 E St. 140-150 Vis.-210°	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 St. Ref. Olive Green	8.50 –10.00	8.50 –10.00	8.50 –10.00
600 St. Ref. Dark Green	6.50 – 8.00	6.50 – 8.00	6.50 – 8.00
Black Oil	5.00	5.00	5.00
PENNSYLVANIA	(1-inch Immersion Test)		
600 Steam Refined	9.00 –10.50	9.00 –10.25	9.00 –10.50
650 Steam Refined	10.50 –12.50	10.50 –12.50	11.00 –12.50
600 Flash	15.00 –16.00	15.00 –16.00	15.00 –16.50
625 Flash	24.00 –27.50	24.00 –27.50	25.50 –27.50
600 Warren E	16.00 –17.00	15.50 –17.00	15.50 –16.00
600 Oil City E	15.00 –16.00	15.00 –15.50	15.00 –15.50
600 D Filtered	22.50 –23.00	22.00 –23.00	22.00 –23.00
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210°, 540-550 flash, No. 8 color	27.00 –28.00	26.50 –28.00	27.00 –28.00
40-50 p.p., 140-150 vis. at 210, 540-550 flash, No. 6-6½ color diluted	25 00 –26.00	24.50 –25.50	24.50 –25.50

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher)

†PRICES NOMINAL ††ONLY ONE REFINER QUOTING *QUOTATIONS ONLY **REPRESENTS BOTH SALES AND QUOTATIONS

An Ideal Premium Motor Fuel

Quick Starting! Powerful Acceleration! Smooth Operation! More Mileage! and Genuinely Anti-Knock!

Such is the Ideal Combination to be found in

SIMMS SPECIAL SMACKOVER GASOLINE.

It requires no benzol, "dope," or other chemical compound. Nevertheless it will satisfy every important requirement of your most exacting customers.

Smackover crude oil, famous for its remarkable anti-knock properties, is used exclusively in the production of this motor fuel.

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SIMMS OIL COMPANY

Producers-Refiners-Marketers

General Offices: DALLAS, TEXAS

Refineries

DALLAS

SMACKOVER

Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

WAX

PENNSYLVANIA	Prices Apr. 2	Prices Mar. 26	Prices Mar. 19
Per Pound, New York			
122-124 white crude scale	3.25 – 3.50	3.125– 3.375	3.25 – 3.50
124-126 white crude scale	3.25 – 3.50	3.25 – 3.375	3.25 – 3.50
****OKLAHOMA**			
124-126 White Crude Scale	3.00 – 3.25	3.25	3.00 – 3.25
CALIFORNIA			
White crude scale, per pound, ton lots	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA			
36-40 fuel oil	5.00 – 5.25	4.875– 5.25	4.75 – 5.25
30-34 fuel oil	4.75 – 5.125	4.75 – 5.00	4.75 – 5.25
28-32 fuel oil	4.75 – 5.00	4.75 – 5.00	4.75 – 5.25
OKLAHOMA			
38-40 straw distillate	3.00 – 3.125	3.00 – 3.25	3.00 – 3.25
36-38 straw distillate	3.00	3.00	3.00
32-36 gas oil, straw	†2.625–2.75	†2.625	†2.50 – 2.62
32-36 dark gas oil	2.625	2.50 – 2.625	2.50
28-30 fuel oil (in bbls.)	$0.95 –1.00	$0.95 – 1.00	$0.95 – 1.00
26-28 fuel oil (in bbls.)	$0.90 –0.925	$0.90 – 0.925	$0.90 – 0.925
24-26 fuel oil (in bbls.)	**$0.85 –0.90	**$0.85– 0.90	**$0.85– 0.875
22-26 fuel oil (in bbls.)	**$0.825–0.85	**$0.80– 0.825	**$0.80– 0.825
18-22 fuel oil (in bbls.)	**$0.80 –0.825	**$0.80	**$0.80
16-18 fuel oil (in bbls.)	**$0.80	**$0.775– 0.80	**$0.775
14-16 fuel oil (in bbls.)	**$0.80	**$0.775– 0.80	**$0.775

Note: Zero cold test low flash gas oils sell for ¼ cent more per gallon. Zero cold test fuel oils sell for 5 to 15 cents more per bbl.

KANSAS *(F. O. B. refinery Kansas destination.)			
38-40 straw distillate	3.50	3.50	3.50
36-38 straw distillate	3.25	3.25	3.25
32-36 gas oil	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
24-26 fuel oil	$0.90 – 1.00	*$0.90– 1.00	*$0.90– 1.00
18-22 fuel oil	*$0.85	*$0.85	*$0.85
NORTH TEXAS			
38-40 straw distillate	3.00 – 3.125	3.00 – 3.25	3.00 – 3.25
32-36 gas oil, cracked	2.375	2.375	2.375
32-36 gas oil, uncracked	2.375	2.375	2.375
24-26 fuel oil (in bbls.)	$0.80	$0.75 – 0.80	$0.75 – 0.80

GULF COASTAL	Prices Apr. 2	Prices Mar. 26	Prices Mar. 19
Fuel (in bbls.)	$1.40 – 1.50	$1.40 –$1.50	$1.40 –$1.50
Gas oil	4.375– 4.50	4.375– 4.50	4.375– 4.50
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
32-36 gas oil, dark	2.625– 2.75	2.75	2.75
32-36 gas oil, straw	2.75 – 2.875	3.00	3.00
16-20 fuel oil (in bbls.)	$0.85 – 0.90	$0.90 –$0.95	$0.95 –$1.00
ARKANSAS (Arkansas destination only)			
32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
32-36 gas oil	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
28-32 gas oil	2.50 – 2.75	2.50 – 2.75	2.50 – 2.75
Road Oil	$1.15	$1.15	.....
CALIFORNIA* (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)			
14-18 fuel oil (in bbls.)	$0.65 – 0.75	$0.65 –$0.75	$0.65 –$1.00
14-18 Bunker oil (in bbls.)	$0.80 – 1.00	$0.80 –$1.00	$0.80 –$1.00
30-34 gas oil (in bbls.)	$1.05 – 1.10	$1.05 –$1.10	$1.05 –$1.10
27 Plus Diesel oil (in bbls.)	$0.90 – 1.00	$0.90 –$1.00	$0.90 –$1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f.o.b. refinery. In tank cars ½c to ¾c per pound less.)			
Snow White	7.75 – 8.375	7.75 – 8.375	7.75 – 8.375
Lily White	6.75 – 7.375	6.75 – 7.375	6.75 – 7.375
Cream White	5.75 – 6.375	5.75 – 6.375	5.75 – 6.375
Blonde	4.50	4.50	4.50
Light Amber	3.25 – 3.625	3.25 – 3.625	3.25 – 3.625
Amber	2.75 – 3.375	3.00 – 3.375	3.00 – 3.375
Red	2.50 – 3.125	2.75 – 3.125	2.75 – 3.125
Green No. 5 color	2.50	2.50	2.50

**PETROLEUM COKE

OKLAHOMA

(Per ton in car lots)

Lump	$4.50 – 5.00	$5	$5
Still run	$2.75 – 3.00	$3	$3
Breeze	$1.75 – 2.00	$2	$2

†PRICES NOMINAL ††ONLY ONE REFINER QUOTING *QUOTATIONS ONLY **REPRESENTS BOTH SALES AND QUOTATIONS

was being quoted at 85 to 87.5 cents a barrel.

Fuel oils in north Texas have done an about face within the past 60 days. Railroads in that district have been bidding actively for business from refiners and have in turn made numerous contracts for fuel oil.

One report indicates several refiners have contracts with railroads which net them $1.00 to $1.05 a barrel for fuel oil, the refiner agreeing in the contract to furnish the railroad with a certain amount of his business.

Oklahoma neutral oils and cylinder stocks continued to move at generally unchanged prices. Orders were reported more numerous in most quarters.

Inquiries have been fair for 124-126 white crude scale wax, with some buying at prices ranging from 3 to 3.25 cents. The prevailing quotation for April delivery was 3.25 cents. Several refiners making wax indicated they were already committed for much of their output.

Prices of petroleum coke were reduced approximately 25 cents a ton. Freight rates have become an important factor in the price of coke.

One refiner early this week had a quantity of distress lump which he moved at approximately $3 a ton.

Sales of breeze have been made at $1.75 to $2 a ton. Still run was moving mostly at $2.75 to $3 a ton.

Week's Price Changes Tank Wagon Markets

Gasoline Changes

Magnolia Petroleum Co.—T.w. and s.s. prices of gasoline advanced **April 2** throughout territory.

Standard Oil Co. of New York—T.w. and s.s. prices advanced 1 cent at Rochester and Buffalo **April 2.** S.s. price only advanced 1 cent **April 2** at Boston.

S.s. price at Syracuse was advanced 2 cents **March 5** to 19 cents.

T.w. price at Manchester, N. H. advanced 2 cents **March 19** and s.s. price 1 cent.

Atlantic Refining Co.—T.w. and s.s. prices at Springfield, Mass., advanced 1 cent to 19 cents **March 28.**

Standard Oil Co. of Nebraska—Adjustments in prices at Omaha were dated as follows, company has announced: T.w. price was 15.25 cents May 10, 1927; was reduced 1 cent May 31, 1927, and advanced 1 cent Feb. 14, 1928, to 15.25 cents. S.s. price was 18.25 cents May 10, 1927; was reduced 2 cents May 16, 1927, and advanced 1 cent to 17.25 cents Feb. 14, 1928.

At Norfolk, Neb., t.w. price was 16.75 cents May 10, 1927; was reduced 2.25 cents Dec. 31, 1927, and advanced 1.50 cents Feb. 16, 1928, to 16 cents. S.s. price May 10, 1927, was 18.75 cents; was reduced 4.25 cents Dec. 31, 1927, and advanced 3.5 cents Feb. 16, 1928, to 18 cents.

Further Restriction Likely In Ventura Field

LOS ANGELES, March 31.—New wells at Ventura avenue the past 10 days have brought the daily production of the field back to where it was before the pinching in program started, meaning that if the production had not been pinched, production in this field would have shown a healthy increase.

Further pinching in will have to be resorted to as the original program for saving gas will not solve the problem. About 75,000,000 cubic feet of gas is now blowing into the air in the field, as the gas companies cannot take as much as formerly, due to lowered consumption. Also each new well furnishes more gas to be added to the already large production.

HOUSTON, March 31.—C. M. Johnson of Okmulgee succeeded R. Q. Traweek as superintendent of the Crown Central Petroleum Corp's ship channel refinery at Houston when Mr. Traweek recently resigned.

Tank Wagon, Service Station Markets for Gasoline and Kerosene In United States Territories and Canada

(As posted by principal marketing companies)

(OIL PRICE HANDBOOK has t.w. and s.s. markets for whole year arranged for quick reference)

These Prices In Effect April 2, 1928

S.O. NEW JERSEY TERRITORY

	Gasoline			Oil
	T.W.	Tax	Total T.W.	S.S.	T.W.
Atlantic City, N. J.	16	2	18	20	14
Newark, N. J.	16	2	18	20	14
Annapolis, Md.	16	4	20	23	12
Baltimore, Md.	16	4	20	23	10
Cumberland, Md.	16	4	20	23	14
Washington, D. C.	16	2	18	21	12
Danville, Va.	16	5	21	*	14
Norfolk, Va.	16	5	21	24	12
Richmond, Va.	14	5	19	22	14
Roanoke, Va.	16	5	21	24	14
Petersburg, Va.	16	5	21	24	14
Charleston, W. Va.	16	4	20	23	14
Keyser, W. Va.	16	4	20	23	14
Parkersburg, W. Va.	14	4	18	21	14
Wheeling, W. Va.	16	4	20	23	14
Charlotte, N. C.	16	4	20	23	14
Hickory, N. C.	16	4	20	20	14
Mt. Airy, N. C.	16	4	20	20	14
Salisbury, N. C.	16	4	20	23	14
Charleston, S. C.	15	5	20	23	14
Columbia, S. C.	15	5	20	23	14

*Dealers set own prices. S. O. New Jersey does not operate station.

Note: Above gasoline and oil prices in N. Carolina include ¼c per gal. inspection fee and in S. Carolina ½c.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	17	0	17	*19	15
Albany, N. Y.	17	0	17	19	15
Buffalo, N. Y.	16	0	16	19	14
†Rochester, N. Y.	16	0	16	19	14
Syracuse, N. Y.	17	0	17	17	15
Boston, Mass.	17	0	17	19	15
Augusta, Me.	17	4	21	23	15
Manchester, N. H.	15	4	19	22	15
Burlington, Vt.	17	3	20	22	15

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator selling Socony gasoline.

†It is reported that S. O. New York is selling a second grade of gasoline at Rochester, 3c below the above posted prices which apply on its Socony grade.

ATLANTIC REFINING

Pittsburgh, Pa.	16	*	16	*22	13
Philadelphia, Pa.	16	*	16	*22	13
Allentown, Pa.	16	*	16	*22	13
Erie, Pa.	12	*	12	*18	13
Scranton, Pa.	16	*	16	*22	13
Altoona, Pa.	16	*	16	*22	13
Dover, Del.	16	3	19	22	13
Wilmington, Del.	16	3	19	22	12
Providence, R. I.	18	2	20	20	15
Boston, Mass.	18	0	18	18	15
Springfield, Mass.	19	0	19	19	15
Worcester, Mass.	18	0	18	18	15
Hartford, Conn.	18	2	20	20	14
New Haven, Conn.	18	2	20	20	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Lexington, Ky.	13	5	18	21	15.5
Louisville, Ky.	13	5	18	21	15
Covington, Ky.	14	5	19	22	15.5
Clarksdale, Miss.	12	4	16	16	11.5
Gulfport, Miss.	††14.5	4	††18.5	21.5	14
Jackson, Miss.	13	4	17	20	12
Natchez, Miss.	12.5	4	16.5	19.5	14
Vicksburg, Miss.	12.5	4	16.5	19.5	14
Birmingham, Ala.‡	13	4	17	18	14
Mobile, Ala.‡	13	4	17	20	14
Montgomery, Ala.*‡	9	4	13	16	15.5
Atlanta, Ga.	13	4	17	18	†15
Augusta, Ga.	13	4	17	18	†16.5
Macon, Ga.	11	4	15	16	†16.5
Savannah, Ga.	13	4	17	17	†14.5
Jacksonville, Fla.°	10	5	15	16	13.5
Miami, Fla.°	14	5	19	20	14.5
Tampa, Fla.°	11	5	16	16	13
Pensacola, Fla.°	**14	5	**19	22	13

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

‡Alabama gasoline prices include 1/40 of 1c inspection fee. Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

°Florida gasoline prices include ⅛c inspection fee.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline			Oil
	T.W.	Tax	Total T.W.	S.S.	T.W.
Chicago, Ill.	14	0	14	16	12
Decatur, Ill.	14.2	0	14.2	16.2	12.1
E. St. Louis, Ill.	13.1	0	13.1	15.35	11.2
Joliet, Ill.	14.4	0	14.4	16.4	12.3
Peoria, Ill.	14.2	0	14.2	16.2	12.1
Quincy, Ill.	14.2	0	14.2	16.2	11.9
Indianapolis, Ind.	14.2	3	17.2	19.2	13.2
Evansville, Ind.	14	3	17	19	13
South Bend, Ind.	14.4	3	17.4	19.4	13.4
Detroit, Mich.	14.8	3	17.8	19.8	13.7
Grand Rapids, Mich.	14.7	3	17.7	19.7	13.6
Saginaw, Mich.	14.9	3	17.9	19.9	13.8
Green Bay, Wis.	14.6	2	16.6	18.6	12.4
Madison, Wis.	14.3	2	16.3	18.3	12.1
Milwaukee, Wis.	14.1	2	16.1	18.1	11.9
La Crosse, Wis.	15.2	2	17.2	19.2	13
Minneapolis, Minn.	14	2	16	18	12.9
Duluth, Minn.	13.5	2	15.5	17.5	12.9
Mankato, Minn.	12.1	2	14.1	16.1	12.7
Des Moines, Ia.	12.9	3	15.9	17.9	12.3
Davenport, Ia.	14.5	3	17.5	19.5	12.3
Sioux City, Ia.	14.1	3	17.1	19.1	11.9
Mason City, Ia.	14.5	3	17.5	19.5	12.3
St. Louis, Mo.	*13.6	2	15.6	17.9	11.3
Kansas City, Mo.	†12.9	2	14.9	16.9	10.6
St. Joseph, Mo.	†12.5	2	14.5	16.5	11.2
Fargo, N. D.	16.9	2	18.9	20.9	14.9
Grand Forks, N. D.	17.2	2	19.2	21.2	15.2
Minot, N. D.	16.9	2	18.9	20.9	14.9
Pierre, S. D.	15.5	4	19.5	21.5	13.9
Huron, S. D.	15.5	4	19.5	21.5	13.9
Wichita, Kans.	12.8	2	14.8	16.8	10.8
Bartlesville, Okla.	12.5	3	15.5	17.5	10.5

S. O. Indiana's quantity discount schedule on tank wagon deliveries of gasoline outside the city of Chicago is 1c for 50 gals. or more at one delivery; 1½c for 6,000 gals. or more a month; 2c for 10,000 gals. or more a month, and 3c for 15,000 gals. or more a month.

In Chicago, above discounts apply, except that minimum required quantity to get the 1c discount is 100 gals., instead of 50 gals. This 1c discount applies on quantities of 100 gals. and over, in addition to regular Q.D.A. discounts applying thru rest of territory, as stated above.

Service station discount is 2c per gal. to consumers of 200 gals. or more a month, or 2400 gals. per year.

Discount on kerosene is 1c on 50 gal. dumps throughout territory.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. NEBRASKA

Omaha, Neb.	13.25	2	15.25	17.25	12.25
McCook	12.75	2	14.75	16.75	11.50
Norfolk	14	2	16	18	12.75
North Platte	15.75	2	17.75	18.5	13.50
Scottsbluff	15.25	2	17.25	19.25	13.00

CONTINENTAL OIL

Denver, Colo.	14	3	17	19	14.5
Pueblo, Colo.	14	3	17	19	14.5
Grand Junction, Colo.	17.5	3	20.5	22.5	18
Casper, Wyo.	14	3	17	19	13
Cheyenne, Wyo.	15	3	18	20	14.5
Butte, Mont.	19.5	3	22.5	22.5	19
Helena, Mont.	19.5	3	22.5	24.5	19
Salt Lake City, Utah	16.5	3½	20	22	17
Boise, Ida.	19.5	4	23.5	25.5	19
Twin Falls, Ida.	19.5	4	23.5	25.5	19
Albuquerque, N. M.	16	5	21	24	17

S. O. CALIFORNIA*

Phoenix, Ariz.	19	4	23	27	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

*On Oct. 1, t.w. price at all points for spot sales, was advanced 1c. Very large portion of deliveries are under contract carrying above prices. New customers signing contracts and selling only one brand of gasoline, are given prices published in above table.

S. O. LOUISIANA

Little Rock, Ark.	15	5	20	21	11
Alexandria, La.	13	2	15	18	†14
Baton Rouge, La.	12	2	14	17	†12.5
Lake Charles, La.	13.5	2	15.5	18.5	†14
New Orleans, La.	13.5	2	*15.5	*18.5	†14
Shreveport, La.	13.5	2	15.5	18.5	†13
Lafayette, La.	13	2	15	18	†13.5
Bristol, Tenn.	16	3	19	22	14
Chattanooga, Tenn.	16.5	3	19.5	22.5	15
Knoxville, Tenn.	16.5	3	19.5	22.5	15
Nashville, Tenn.	15	3	18	21	15
Memphis, Tenn.	14	3	17	18.5	14

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax

S. O. OHIO

	Gasoline			Oil
	T.W.	Tax	Total T.W.	S.S.	T.W.
All Ohio points	14	3	17	19	14

MAGNOLIA PETROLEUM

Muskogee, Okla.	14	3	17	18	11
Oklahoma City	13	3	16	17	11
Tulsa, Okla.	13	3	16	17	11
Fort Smith, Ark.*	14	*3	17	20	12
Little Rock, Ark.	16	5	21	22	12
Texarkana, Ark.*	14	*3	17	21	12
Dallas, Tex.	11	3	14	18	11
Fort Worth, Tex.	12	3	15	18	11
Houston, Tex.	11	3	14	18	15
San Antonia, Tex.	12	3	15	18	10
El Paso, Tex.	14	3	17	20	16

*Within City of Texarkana and Fort Smith, the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In these two districts outside of the city the 5c Arkansas tax applies.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		19	....

Note: Above prices on Oleum Spirits and V. M. & P. Naphthas went into effect Jan. 3, 1928.

*Includes 2c state tax.

†Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline			Oil
	T.W.	Tax	Total T.W.	S.S.	T.W.
Toronto	19.5	3	22.5	26	21
Ottawa	19.5	3	22.5	26	21
Cochrane	24.5	3	27.5	36	26
Ft. William	22.5	3	25.5	29	22.5

MANITOBA

Winnipeg	21.5	3	24.5	28	21.5

SASKATCHEWAN

Regina	25.5	0	25.5	30	25.5

ALBERTA

Edmonton	26.5	3	29.5	33	26.5
Calgary	22.5	3	25.5	29	22.5

BRITISH COLUMBIA

Vancouver	21	3	24	28	22

QUEBEC

Montreal	20.5	3	23.5	27	21
Quebec City	22.5	3	25.5	31	23
Three Rivers	22.5	3	25.5	29	23

NEW BRUNSWICK

St. John	22.5	3	25.5	30	22
Moncton	22.5	3	25.5	30	22

NOVA SCOTIA

Halifax	22.5	5	27.5	32	24
Sydney	22.5	5	27.5	32	24

PRINCE EDWARD ISLAND

Charlottetown	22.5	3	25.5	29	22

Note: In districts surrounding these points 1c additional is added to city price.

Heavy Buying, Price Advances Mark Week in Gulf Market

Staff Special
NEW YORK, March 31

SALES involving nearly 180,000 barrels of gasoline and kerosene, inquiries approximating 170,000 barrels of the same oils which remained in the market at close of business March 31, together with a 0.25-cent advance in prices for light oils were the high lights in one of the most active weeks Gulf export markets have experienced since the first of the year.

Standard Oil Co. of New Jersey on March 28 advanced its posted price for export gasoline in cases at New York 0.25 cent to 24.90 cents. Although this price is generally considered more or less of a figurehead, the export trade usually takes it as an indicator for prices at the Gulf. Bulk prices as a result were advanced a similar amount. The advance by the Standard of New Jersey brings the total increase since March 1, 1928 to 1.25 cents and the present price of 24.90 cents is 1 cent above the low and 3 cents under the high for 1927.

What the trade termed "freak transactions" appeared to be the rule rather than the exception in this week's market. The majority of suppliers were in accord in their ideas of prices, but at the same time gasoline and kerosene sold at as much as 0.5-cent above and below prices which were generally accepted as the market.

The sale made by a leading Independent refiner to its French subsidiary was considered more representative of the general market by most suppliers. The cargo, which is for late April lifting, is to consist of between 60,000 and 70,000 barrels of 61-63, 390 end point and 64-66, 375 end point gasoline and prime white kerosene, and the prices obtained were 8.75 cents, 9 cents and 5.75 cents, respectively. The original inquiry did not specify 390 end point gasoline but was later revised to include approximately 15,000 barrels of this grade.

A transaction involving 63,000 barrels of 64-66, 375 end point gasoline, water white and prime white kerosene, was closed early in the week taking the following prices: 9.125 cents, 6.75 cents and 5.75 cents, respectively. The cargo is for immediate loading at the Gulf for shipment to a French oil company for the account of a broker who sold early in March at 8.25 cents, 6.4375 cents and 5.4375 cents, respectively.

On March 29, an Independent refiner sold part cargo lots of U. S. Motor, 61-63, 390 end point and 64-66, 375 end point gasoline and prime white kerosene at 7.75 cents, 8.25 cents, 8.75 cents, and 5.875 cents respectively. Three French companies were named as unit buyers.

The price for kerosene was considered 0.125 cent high, at the time the sale was made, by several suppliers, but was obtained, it was felt, due to the exceptionally low prices for the three grades of gasoline. On the other hand there was a decided upward tendency noted in prices for refined oil toward the end of the week. The season for large domestic consumption of kerosene is approaching, and a stiffening in domestic prices was quickly reflected in export prices at the Gulf.

Inquiries specifying quantities of kerosene were in the market this week for the first time in several weeks. As recently as March 26 it would have been possible for foreign buyers to do 6.50 cents and 5.50 cents for water white and prime white, but by the end of this week 6.75 cents and 5.75 cents were minimum asking prices, and some suppliers were indicating as high as 7 cents and 6 cents, respectively.

A Continental buyer was in the market March 28 for approximately 42,000 barrels of water white kerosene for April shipment. This inquiry specifying kerosene only is the first that has been in the market since the latter part of January.

Most prominent among the inquiries remaining in the market was one from a French buyer calling for approximately 76,000 barrels of 64-66, 375 end point gasoline, water white and prime white kerosene, for June loading at the Gulf. Suppliers were submitting quotations March 30 and 31 with a view to the business being closed early next week.

English buyers continued to inquire for sizable quantities of 61-63, 390 end point gasoline and as near as could be ascertained were unable to better 8.75 cents asked by most exporters. An English buyer also was in the market for a small quantity of 64-66, 375 end point gasoline afloat.

The heavy oil market at the Gulf was featureless and no material change in prices was noted. Gas oil was freely offered at 3.75 to 4 cents a gallon with no takers. Fuel oil in cargoes was quoted at $0.90 to $0.95 a barrel, although it was felt the lower price could be shaded for low gravity oil. Bunker prices were unchanged.

Eastern Seaboard Market Shows Cent Advance on Gasoline

Staff Special
NEW YORK, March 31

MARCH markets held well to predictions the New York oil trade made early this month. U. S. Motor gasoline quotations at New York harbor, the key market for all Atlantic seaboard points with the possible exception of those south of Cape Hatteras, showed an advance of 1 cent a gallon over the month.

Not only did prices advance to predicted levels, but sentiment among oil men at the end of the month was diametrically the opposite of the pessimistic tone that pervaded the market the last week of February.

When asked for reasons for the sharp price advances, almost without exception the oil man this week replied with something to the effect that, "We're out to make money in 1928,—at least a little more than we did in 1927."

Spot demand for gasoline continued relatively slow and the trade was concerned more with business closed on an over-the-month contract basis. It was pointed out in a good many quarters, however, that the market is nearing the season when spot demand becomes more contingent upon changes in the weather and from now on it is anticipated the call for prompt shipment will steadily increase.

Slight evidence of this rule, which appears to prevail in the oil industry, was apparent early this week. Last Saturday and Sunday a 70-degree temperature covered the northern part of the Atlantic coast, and the near-summer weather brought many a jobber in the market for an extra car of gasoline Monday morning. Inclement weather again pervaded New York state and New England late this week and, as several market factors expressed it, spot demand shut up tighter than a clam.

An advance of 0.25-cent a gallon in spot prices for U. S. Motor gasoline in tank cars was general along the seaboard this week. The advance was more marked at New York harbor refineries than elsewhere, but at all points the number of sellers raising their prices was nearly a majority.

Several resale agents in New York were still selling under the prices asked by all major refiners by a 0.25 cent and in some instances as much as 0.5 cent but their offerings comparatively speaking were small

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Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the years 1924-1925-1926-1927)

Eastern Domestic Market

(Prices for tank car lots, f.o.b. refinery or seaboard terminal, represent majority of quotations and sales.)

	Apr. 2	Mar. 26	Mar. 19
U.S. Motor gasoline, New York harbor	9.00	8.75	8.75
U.S. Motor gasoline, Philadelphia	8.75 – 9.00	8.75 – 9.00	8.75
U.S. Motor gasoline, Boston district	9.50	9.00 – 9.25	9.00 – 9.25
U.S. Motor gasoline, Providence district	9.25 – 9.50	9.00 – 9.25	9.00 – 9.25
U.S. Motor gasoline, Baltimore	8.75 – 9.00	8.75	8.50 – 8.75
U.S. Motor gasoline, Norfolk	9.00	8.75	8.50 – 8.75
U.S. Motor gasoline, †Wilmington, N. C.	†9.00	8.75	8.50
U.S. Motor gasoline, Charleston	8.75	8.50	8.50
U.S. Motor gasoline, Savannah	8.50	8.00	7.75 – 8.00
U.S. Motor gasoline, Jacksonville	8.50	8.00	7.75 – 8.00
California U.S Motor gasoline, †New York Harbor	9.00	8.75 – 9.00	8.75 – 9.00
California U.S. Motor gasoline, Baltimore	9.00	9.00	9.00
California U.S. Motor gasoline, Philadelphia	9.00	8.75	8.75
Water white kerosene, New York Harbor	7.00	7.00	7.00
Water white kerosene, Philadelphia	6.75 – 7.00	6.50 – 7.00	6.75 – 7.00
Water white kerosene, Baltimore	7.50	7.25 – 7.50	7.25 – 7.50
28-34 gas oil, New York harbor	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
28-34 gas oil, Boston district	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
38-42 furnace oil, New York harbor	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
36-40 furnace oil, Boston district	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
Grade C bunker oil, New York harbor	$1.35	$1.35	$1.35
Grade C bunker oil, Boston district	$1.35	$1.35	$1.35
Diesel oil, New York harbor	$2.00	$2.00	$2.00

Note: Above prices do not include inspection tax levied in some states.

MEDICINAL OILS

Russian 885-890 s.g., 325-330 vis	$0.80 – 0.90	$0.80 – 0.90	$0.80 – 0.90
Russian 870-875 s.g., 150-155 vis	$0.67 – 0.77	$0.67 – 0.77	$0.67 – 0.77
Russian 860-865 s.g., 80-85 vis	$0.65 – 0.75	$0.65 – 0.75	$0.65 – 0.75

†Only one refiner quoting.

New York Export Market

(Gasoline and kerosene in cases in bulk. Lubricating oils are per gal. in bbls. Cylinder oils are Penna. products.)

	Apr. 2	Mar. 26	Mar. 19
U. S. Motor gasoline	24.90	24.65	24.65
43-45, 150 w.w. kerosene	17.90	17.90	17.90
42-44, 110 s.w. kerosene	16.90	16.90	16.90
CYLINDER OILS			
Bright stock, dark	33.00	32.50 –34.00	33.00 –34.50
600 D filtered	30.00 –31.00	30.00 –31.00	30.50 –31.00
600 Warren E filtered	23.50 –25.00	23.00 –25.00	24.00 –25.00
600 s.r. unfiltered	16.75 –17.00	16.00 –17.00	16.00 –17.00
650 s.r. unfiltered	18.25 –19.50	18.00 –19.50	18.00 –19.50
600 flash s.r.	20.00 –21.00	20.00 –21.00	20.00 –21.00
630 flash, s.r.	32.00 –34.50	31.00 –34.50	32.00 –34.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00	20.00	20.00
250 vis. No. 6 color	19.00	19.00	19.00
200 vis. No. 6 color	18.50	18.50	18.50
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	24.00	24.00	24.00
180 vis. No. 3½ color	20.00	20.00	20.00
100 vis. No. 2¼ color	15.75	15.75	15.75
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	35.00	35.00	35.00
500 vis. No. 6½ color	33.00	33.00	33.00
400 vis. No. 7¼ color	31.00	31.00	31.00
300 vis. No. 6 color	30.00	30.00	30.00
200 vis. No. 3¼ color	24.00	24.00	24.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70

WAXES (In cents per pound, f.a.s. carload lots)

WHITE CRUDE SCALE (In barrels)

	Apr. 2	Mar. 26	Mar. 19
122-124 A.m.p.	3.25	3.15 – 3.25	3.15 – 3.25
124-126 A.m.p.	3.25	3.15 – 3.25	3.15 – 3.25
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	4.00	4.00	4.00
125-127 A.m.p.	4.00	4.00	4.00
128-130 A.m.p.	4.25	4.125– 4.25	4.125– 4.25
130-132 A.m.p.	4.25 – 4.50	4.25 – 4.375	4.25 – 4.375
133-135 A.m.p.	5.25 – 5.50	5.50	5.50
135-137 A.m.p.	5.625– 5.875	6.00	6.00
YELLOW CRUDE SCALE			
124-126 A.m.p.	2.875– 3.00	2.875– 3.00	2.875– 3.00

***Prices nominal.**

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over unless otherwise noted, representing sellers' opinions, except those prices specified to the contrary.)

GASOLINE	Apr. 2	Mar. 26	Mar. 19
U. S. Motor	8.00	7.75	7.25 – 7.75
60-62, 400 e.p.	8.50	8.25	8.00 – 8.25
61-63, 390 e.p.	8.75	8.50	8.25 – 8.50
64-66, 375 e.p.	*9.00	8.75	8.50 – 8.75
U. S. Motor, cases (cargoes)	$1.70	$1.70	$1.65 –$1.70
64-66, cases (cargoes)	$1.80	$1.80	$1.75 –$1.80

***Sales only.**
†Quotation to inquiries only.

KEROSENE			
44 water white	*6.75	6.75	6.50 – 6.75
41-43 prime white	*5.75	5.75	5.50 – 5.75
Water white, cases (cargoes)	$1.55 – 1.60	$1.55	$1.55
Prime white, cases (cargoes)	$1.45 – 1.50	$1.45	$1.45

***Sales only.**

DOMESTIC GAS & BUNKER OILS			
26-32 translucent gas oil	3.75 – 4.00	3.75 – 4.00	3.75 – 4.00
Grade C bunker oil	$1.05 – 1.15	$1.05 –$1.15	$1.05 –$1.15
Grade C bunker oil, cargoes	$0.90 – 0.95	$0.90 –$0.95	$0.90 –$0.95

MEXICAN CRUDE AND BUNKER OILS (F.O.B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$1.05	$1.05	$1.05
Grade C bunker oil, for bunkering purposes, taxes paid	$1.20	$1.20	$1.20

SOUTH TEXAS LUBRICATING OILS (Viscosity at 100° F.; cold test 0)
(Tanker, f.o.b. Houston)

100 vis. No. 2 unfiltered pale	6.00	6.00	6.00
200 vis. No. 3 unfiltered pale	7.75 – 8.00	7.50 – 8.00	7.50 – 8.00
300 vis. No. 3 unfiltered pale	9.00 – 9.25	8.875– 9.00	8.875– 9.00
500 vis. No. 3½ unfiltered pale	11.00 –11.75	11.00 –11.25	11.00 –11.25
750 vis. No. 4 unfiltered pale	12.50 –13.00	12.50 –13.00	.....
1200 vis. No. 5 unfiltered pale	15.50 –16.00	15.50 –16.00	.....
200 vis. No. 5-6 red oil	7.00 – 7.25	6.875– 7.00	6.875– 7.00
300 vis. No. 5-6 red oil	8.00 – 8.375	8.00 – 8.25	8.00 – 8.125
500 vis. No. 5-6 red oil	9.50 –10.00	9.00 –10.00	9.50 –10.00
750 vis. No. 5-6 red oil	11.25 –11.50	11.25 –11.50	.....
1200 vis. No. 5-6 red oil	14.00 –14.50	14.00 –14.50	.....

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Apr. 2	Mar. 26	Mar. 19
Gasoline, U. S. Motor, 53-55 Gravity	6.50 – 6.75	6.375– 6.75	6.25
Gasoline, U. S. Motor, blends and special cuts	7.50 – 8.50	7.00 – 8.00	7.00 – 8.00
Gas Oil, 30-34, per barrel	$1.05 –$1.10	$1.05 –$1.10	$1.05 –$1.10
Diesel Oil, 27 plus, per barrel	$0.95 –$1.05	$0.95 –$1.05	$0.95 –$1.05
Bunker oil, 14-18, per barrel	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
Fuel oil, 14-18, per barrel	$0.67 –$1.00	$0.67 –$1.00	$0.67 –$1.00
Kerosene, 38-40 w.w., 125-150 flash, per gal.	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00
Cased Goods			
Gasoline, U. S. Motor	$1.70 –$1.80	$1.70 –$1.80	$1.70 –$1.80
Kerosene, 38-40 w.w., 125-150 flash	$1.35 –$1.45	$1.35 –$1.45	$1.35 –$1.45

Crude Oil Prices, as Posted by Major

(Crude prices for years 1924-1925-1926-1927 in

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$2.80
Bradford District Oil in National Transit Lines (Bradford District)	2.80
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	2.65
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	2.65
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	2.60
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	2.35
Keister Grade in National Transit Lines (Butler Co)	1.10
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.35
Corning Grade in Buckeye Pipe Lines (Ohio)	1.55
Corning, O. heavy grade	1.45
*Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.45
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

*Somerset oil run prior to Oct. 1922, takes price of 6 cents lower than above quotations.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Wooster	$1.57	Plymouth	$1.23
Lima	1.55	West Kentucky	1.33
Waterloo	1.20	*Canadian Petro.	1.95
Indiana	1.32	*Oil Springs	2.02
Princeton	1.50	*Posted by Imperial Oil Ltd.	
Illinois	1.50		

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Feb. 21, 1928

28-28.9	$0.96	41-41.9	$1.43
29-29.9	1.01	42-42.9	1.46
30-30.9	1.06	43-43.9	1.49
31-31.9	1.11	44-44.9	1.52
32-32.9	1.16	45-45.9	1.55
33-33.9	1.19	46-46.9	1.58
34-34.9	1.22	47-47.9	1.61
35-35.9	1.25	48-48.9	1.64
36-36.9	1.28	49-49.9	1.67
37-37.9	1.31	50-50.9	1.70
38-38.9	1.34	51-51.9	1.73
39-39.9	1.37	52 and above	1.76
40-40.9	1.40		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

Effective Feb. 21, 1928

Below 25	$0.76	26-26.9	$0.86
25-25.9	0.81	27-27.9	0.91

Humble Prices (Cont'd)

28-28.9	$0.96	37-37.9	$1.31
29-29.9	1.01	38-38.9	1.34
30-30.9	1.06	39-39.9	1.37
31-31.9	1.11	40-40.9	1.40
32-32.9	1.16	41-41.9	1.43
33-33.9	1.19	42-42.9	1.46
34-34.9	1.22	43-43.9	1.49
35-35.9	1.25	44 and above	1.52
36-36.9	1.28		

Mirando, Tex	$1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Feb. 21, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades, unchanged from Feb. 16:

Below 30	$0.75
30-30.9	0.90
31-31.9	1.05
Glasscock and Howard Counties	$0.60
Chalkfield (Howard Co.)	$0.80
Iatan district	$0.93
Corsicana heavy	$1.00

Carter Oil Co.

(Oklahoma and Kansas)

Feb. 21, same schedule as Prairie plus these grades:

24-24.9	$0.76	26-26.9	$0.86
25-25.9	0.81	27-27.9	0.91

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective Feb. 21, 1928

Hutchinson and Carson Counties:

Below 31	$0.60	38-38.9	$0.88
31-31.9	0.65	39-39.9	0.91
32-32.9	0.70	40-40.9	0.94
33-33.9	0.73	41-41.9	0.97
34-34.9	0.76	42-42.9	1.00
35-35.9	0.79	43-43.9	1.03
36-36.9	0.82	44 and above	1.06
37-37.9	0.85		

Wheeler County:

Below 29	$0.60	37-37.9	$0.95
29-29.9	0.65	38-38.9	0.98
30-30.9	0.70	39-39.9	1.01
31-31.9	0.75	40-40.9	1.04
32-32.9	0.80	41-41.9	1.07
33-33.9	0.83	42-42.9	1.10
34-34.9	0.86	43-43.9	1.13
35-35.9	0.89	44 and above	1.16
36-36.9	0.92		

Gray County:

Below 27	$0.60	36-36.9	$1.02
27-27.9	0.65	37-37.9	1.05
28-28.9	0.70	38-38.9	1.08
29-29.9	0.75	39-39.9	1.11
30-30.9	0.80	40-40.9	1.14
31-31.9	0.85	41-41.9	1.17
32-32.9	0.90	42-42.9	1.20
33-33.9	0.93	43-43.9	1.23
34-34.9	0.96	44 and above	1.26
35-35.9	0.99		

WEST TEXAS

Humble Oil & Refining Co.

Effective Aug. 23

Crane, Upton, Crockett and Pecos Counties	$0.60

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton and De Soto

Effective Feb. 21, 1928

Below 28	$0.91	40-40.9	$1.40
28-28.9	0.96	41-41.9	1.43
29-29.9	1.01	42-42.9	1.46
30-30.9	1.06	43-43.9	1.49
31-31.9	1.11	44-44.9	1.52
32-32.9	1.16	45-45.9	1.55
33-33.9	1.19	46-46.9	1.58
34-34.9	1.22	47-47.9	1.61
35-35.9	1.25	48-48.9	1.64
36-36.9	1.28	49-49.9	1.67
37-37.9	1.31	50-50.9	1.70
38-38.9	1.34	51-51.9	1.73
39-39.9	1.37	52 and above	1.76

*Smackover, below 24	$0.75
* do 24 and above	.90
Bellevue	1.25
Cotton Valley	.75
**Urania, La	.75
†East El Dorado	1.00

**Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

*Smackover prices posted on Feb. 7 by S. O. La., Gulf, Shreveport-El Dorado Pipe Line, Atlantic Oil Producing Co. and The Texas Co.; on Feb. 8 by Magnolia; on Feb. 6, by La. Oil Refg. Corp.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp.

Below 28	$0.85	30-30.9	$0.91
28-28.9	0.87	31-31.9	0.93
29-29.9	0.89	32 and above	0.95

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14, 1927

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

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and had little influence on the general market. Occasional cars of U. S. Motor sold at 8.25 to 8.50 cents early in the week and at 8.50 to 8.75 cents during the latter days but for the most part orders for spot shipment brought 8.75 to 9 cents. It was generally admitted that jobbers who were willing to commit themselves over April were pretty well covered at 8.75 cents for this period, but all major refiners in New York harbor asserted they were adhering strictly to a 9-cent price for additional spot business.

The advance to 9 cents for U. S. Motor at Philadelphia was unanimous among the three major refiners in this district, but one company with a water terminal up to March 31 was still offering any part of 3,000,000 gallons of this grade at 8.75 cents.

In the New England markets, a number of refiners who had been quoting 9 cents for U. S. Motor gasoline, f.o.b. shipping point, advanced their prices 0.25 cent coincident with the increases in other markets. At the end of the week, however, there were still several sellers taking on spot business at 9 cents, and the volume of goods involved was sufficient to be a factor in the market. The range of 9 to 9.25 cents which has prevailed for U. S. Motor in the Boston and Providence districts for nearly six weeks remained unchanged.

At southern seaboard points, Baltimore, Norfolk, Charleston, Savannah and Jacksonville, the price advances were not unanimous and market ranges of 0.25 cent developed where flat prices had previously prevailed.

California refiners apparently relinquished none of their firm hold on the cargo market and eastern buyers continued to report it exceedingly difficult to negotiate for goods for loading any earlier than the middle of May. Cargo prices on the west coast, however, have not advanced as much in proportion to tank car prices for U. S. Motor on the east coast. Subsequently tank car prices for California gasoline in Atlantic seaboard markets remained largely unchanged this week. California gasoline was quoted at the same price as U. S. Motor in New York harbor and at Baltimore sellers of the former grade were quoting 9 cents, the asking price of two refiners for U. S. Motor.

Burning oil markets from the standpoint of demand were featureless, and only routine inquiries from industrial users of heavy oils were reported. There was an upward tendency noted in kerosene prices, which, refiners explained, reflected more the better position this commodity has attained in other markets than any increase in trading.

Purchasers, in All Fields (in Effect April 2)

OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Feb. 21, 1928)

‡Salt Creek below 29	$0.96
" " 29-29.9	1.01
" " 30-30.9	1.06
" " 31-31.9	1.11
" " 32-32.9	1.16
" " 33-33.9	1.19
" " 34-34.9	1.22
" " 35-35.9	1.25
" " 36-36.9	1.28
" " 37 and above	1.31
Elk Basin	1.33
Grass Creek light	1.33
Big Muddy	$1.25
Lance Creek	1.33
Rock Creek	1.25
Mule Creek	1.10
Rex Lake	1.10
‡Osage	1.33
‡Cat Creek, Mont.	1.33
Sunburst, Mont.	1.50
‡Hogback, N. Mex.	1.38
Artesia, N. Mex.	1.00

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA

Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Hill Seal Beach Huntington Beach	Inglewood Torrance	Whittier La Habra	Newhall, McKittrick, Kern River	Olinda-Brea Canon, Richfield	Athens-Rosecrans Dominguez	Montebello	Coyote Hills	Santa Fe Springs	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	....	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85
15-15.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
16-16.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
17-17.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
18-18.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
19-19.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
20-20.9	.85	.85	.85	....	.85	....	.85	.85	....	.77	.77	.76	.76	.85	.85
21-21.9	.86	.86	.85	....	.86	....	.85	.86	.85	.79	.79	.77	.77	.85	.85
22-22.9	.87	.87	.85	....	.87	....	.85	.87	.85	.81	.81	.78	.78	.85	.85
23-23.9	.88	.88	....	....	.88	....	.85	.88	.85	.83	.83	.79	.79	.85	.85
24-24.9	.89	.89	....	....	.89	$ .89	.85	.89	.85	.85	.85	.80	.80	.85	.85
25-25.9	.90	.90	....	....	.90	.90	.86	.90	.86	.87	.87	.81	.81	.86	.86
26-26.9	.92	.92	....	....	.92	.92	.87	.91	.87	.89	.89	.83	.82	.87	.87
27-27.9	.94	.94	....	....	.94	.94	.88	.92	.88	.91	.91	.85	.83	.88	.88
28-28.9	.96	.96	....	....	.96	.96	.89	.93	.89	.93	.93	.87	....	.89	.89
29-29.9	.98	....	....	....	.98	.98	.90	.94	.91	.96	.96	.89	....	.91	.91
30-30.9	1.00	....	....	....	1.00	1.00	.91	.95	.93	.99	.99	.91	....	.93	.93
31-31.9	1.03	....	....	....	....	1.03	....	....	.95	1.02	1.02	.93	....	....	.95
32-32.9	1.06	....	....	....	....	1.06	....	....	.97	1.05	1.05	.95	....	....	.97
33-33.9	....	....	....	....	....	1.09	....	....	.99	1.08	1.08	.97	....	....	.99
34-34.9	....	....	....	....	....	1.12	....	....	1.01	....	1.11	.99	....	....	1.01
35-35.9	....	....	....	....	....	1.15	....	....	1.03	....	....	1.01	....	....	1.03
36-36.9	....	....	....	....	....	1.18	....	....	1.06	....	....	....	....	....	1.06
37-37.9	....	....	....	....	....	1.21	....	....	1.09	....	....	....	....	....	1.09
38-38.9	....	....	....	....	....	1.24	....	....	1.12	....	....	....	....	....	1.12
39-39.9	....	....	....	....	....	1.27	....	....	1.15	....	....	....	....	....	1.15
40-40.9	....	....	....	....	....	1.30	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	....	....	1.33	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	....	....	1.36	....	....	....	....	....	....	....	....	....

*Union Oil Co. also purchases Long Beach Crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders as effective the date shown.

Refiners' Supplies

	Apr. 2	Mar. 26
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.65	$1.65
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums, cwt.	$0.65-0.70	$0.65-0.70
Sal Soda wks.	$0.90-1.10	$0.90-1.10
Caustic Soda 76% solid, cwt.	$3.66	$3.66
Chloride of Lime, cwt., wks.	$2.00	$2.00
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks	$18.50	$18.50
Sulfur, flowers of, cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks, lb.	3.50-5.00	3.50-5.00
Litharge, powdered, casks, cwt.	$8.50	$8.50

Compounders' Supplies

Vegetable Oils

	Apr. 2	Mar. 26
Linseed carloads, spot, lb.	9.80	9.90
Tanks, spot	9.00	9.10
Soya Bean, Tanks, coast, lb.	*9.50	*9.50

Oleic Acid

Distilled, tanks, lb.	8.25	8.25
Distilled, bbls, lb.	9.00	9.00
Saponified, tanks, lb.	8.75	8.75
Saponified, bbls, lb.	9.50	9.50

Lard Oils

Prime Winter Strained, lb.	16.00	15.75
Extra Winter Strained, lb.	13.00	12.75
Extra, lb.	12.375	12.25
Extra No. 1, lb.	11.75	11.50
No. 1, lb.	11.25	11.25
No. 2, lb.	11.00	10.75
Tallow oil, lb.	11.25	11.375

Neatsfoot Oil

Pure, bbls, lb.	15.75	15.75
Extra, bbls, lb.	12.00	11.75
No. 1, bbls, lb.	11.50	11.50
Cold Pressed, lb.	18.25	18.50

Fish Oils

Menhaden Oil		
Light Pressed, gal.	60–62	60–62
Light Pressed, tank cars, N. Y., gal.	52	52
White, gal.	65–66	65–66
Yellow bleached, gal.	63–64	63–64
Whale, extra winter bleached, gal.	82	82

Naval Stores

Steam distilled turpentine, N. Y., gal.	57	57
Steam distilled turpentine, Savannah, gal.	52	52
Gum turpentine, N. Y., gal.	60.00	62.50
Gum turpentine, f.o.b. cars Savannah, gal.	55.00	56.25
Wood Rosin F, N. Y., bbl.	$8.05	$8.30
Wood Rosin F, Savn'h, bbl.	$7.25	$7.50
Gum Rosin B, N. Y., bbl.	$8.25	$8.10
Gum Rosin B, f.o.b. cars Savannah, bbl.	$7.55	$7.40
Rosin oil, pure, gal.	55	55
Rosin oil, compounded, gal.	47	47

Pine Tar

Kiln burnt, bbl.	*$13.00	*$13.00
Retort, bbl.	$16.00	$16.00

Alcohol

Denatured, Formula 5, in bbls., per gal.	50-54	50-54

*Nominal.

Gasoline and Kerosene Advance ⅛ Cent in Chicago

Staff Special
CHICAGO, March 31

KEROSENE was in good demand all week, most of Chicago trade reported. Several refiners said they were behind on shipments. One refiner reported "sold up" for the next three weeks.

Practically all sellers advanced quotations on 41-43 w.w. kerosene .125 cent at some time during the week. Some moved up .25 cent.

The bulk of goods moved at 4.375 to 4.50 cents on Monday, Tuesday and Wednesday. Thursday the majority of sellers were getting 4.50 cents and by Saturday it moved mostly at 4.50 to 4.625 cents. Several sellers reported sales Saturday at 4.75 cents.

Carload marketers said they were unable to buy 41-43 w.w. under 4.50 cents Saturday except in rare cases. Most of them were in good shape on kerosene, having sold practically all goods purchased early in the month.

Domestic demand for U. S. Motor and 60-62, 437 e. p. gasoline was good. Heavy export buying of the past week put the higher gravities in better shape. All grades of gasoline gained about .125 cent over the week.

Several sellers reported a fair number of sales for delivery the first half of April at around 6.50 cents.

The bulk of 58-60 U. S. Motor gasoline sales was at 6.375 to 6.50 cents until Thursday and at 6.50 cents thereafter. Sales were reported at 6.625 and 6.75 cents Saturday. The 60-62, 437 e. p. gasoline moved at 6.50 cents until Thursday and at 6.50 to 6.625 cents the rest of the week. Sales were reported at 6.375 cents early in the week and at 6.75 cents Friday and Saturday.

Gasoline of 60-62, 400 e. p. was 6.625 to 6.75 cents Monday, Tuesday and Wednesday; at 6.75 cents flat Thursday and at 6.75 to 6.875 cents Saturday. A price of 7 to 7.125 cents prevailed on the 64-66, 375 e. p. gasoline until Saturday when the bulk of sales was 7.125 cents.

A slight pickup was observed in distillate demand Thursday coincident with cooler weather. Sales of 38-40 straw distillate ranged from 3 to 3.375 cents, but the bulk of movement was at 3.125 to 3.25 cents.

Several industrial concerns placed orders for large quantities of 32-36 industrial gas oil. Two refiners, who have been moving this grade at 2.50 cents, reported being "sold up."

Bulk of 32-36 ordinary dark gas oil moved at 2.625 cents Saturday after being at 2.50 to 2.625 cents most of the week. Dark zero 32-36 gas oil moved throughout the week at 2.75 to 2.875 cents. The 32-36 straw zero gas oil moved mostly at 3 cents all week.

Fuel oil prices continued at levels maintained for the past two weeks. Several sellers reported steady movement of small lots of goods. Most of the trade reported that higher gravity oil was offered more freely.

Fuel oil of 28-30 gravity sold throughout the week at $1 to $1.075. Fuels of 24-26 and 22-26 gravity were unchanged over the week at $0.85 to $0.90. The 18-22 fuel oil sold mostly at $0.80 to $0.90. Smackover treated fuel quotations and sales were unchanged at $0.90 to $0.95.

Temperatures will be mostly above normal in Standard of Indiana territory the first half of week starting April 1, followed by colder weather in the latter half. One or two precipitation periods will occur during the week.

HOUSTON, March 31.—Unchanged conditions are reported by Gulf Coastal lubricant manufacturers over the week. Their relatively better position as compared with a month ago is, however, being sustained.

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California Markets Are Stronger

LOS ANGELES, March 31.—California petroleum markets this week were stronger with higher quotations on gasoline and indications of strength in fuel oil prices.

Most of the major refiners refused to quote on export gasoline, evidently feeling that better prices will prevail shortly. This expectation was borne out Wednesday with the price boost on gasoline at the Gulf, making the larger refiners firm in their decision to hold their products for better offers. U. S. motor export prices at end of week were 6.50 to 6.75 cents.

Tank car gasoline is also showing strength with out of state prices ranging from 7.50 cents up, while gasoline within the state was selling 8 cents up. Stocks of gasoline in the hands of the smaller refiners (usually called Independent), are lower this week than for the past two years. These refiners are having trouble in securing crude, and in many instances must pay a premium. Ten-cent premiums are being offered at Long Beach and some spot crude could sell at 15 cents premium if offered. The price of spot natural gasoline is also a factor, as this product is selling at 8.50 cents up for spot movement in small lots.

There is some strength exhibited in fuel oil largely due to the fact that there is no distress fuel on the market. Also, refiners figure that the shutting in of more heavy oil wells in the state will stop the gradual increase in storage of heavy oils and fuel oils, thus providing a better market for the product already on hand.

The local gasoline price situation was confused late this week. The 6-cent differential contracts signed last year all have expired, and every sales manager is watching the other to see if they are to be renewed. As far as could be learned, none had been renewed up to Friday night. If these contracts are renewed, a new price war is likely, as some of the refiners who have refused to allow the reseller a profit exceeding 4 cents are in a bad humor, and may take the bit in their teeth and cut service station prices.

CLEVELAND, April 2.—Delivered price of U. S. Motor gasoline at Cleveland is 9.25 to 9.58 cents and elsewhere in Ohio 9.50 to 9.71 cents. State tax of 3 cents a gallon is added by seller or buyer depending on origin of the gasoline.

TULSA, April 2.—J. F. Nagle, district sales representative of the Skelly Oil Co. at Tulsa, has returned from a trip through refining centers in Texas.

OIL STOCKS AND FINANCES

National Petroleum News

Barnsdall Corp. Omits Dividend in Stock

NEW YORK, March 31.—Barnsdall Corp. has passed its quarterly dividend of 2½ per cent in stock. Before the stock payments in stock the last two quarters the corporation paid 62½ cents per $25 share cash each quarter.

E. B. Reeser, president, said the company had earned the dividend and its cash position was such that the dividend could have been declared but directors thought the oil industry was still so unsettled that conservation of cash was advisable.

Directors re-elected all officers.

Northern P. L. Expected To Reduce Capital

CLEVELAND, April 2.—Special meeting of Northern Pipe Line Co. stockholders will be held at an early date to consider reduction of the capital stock from $4,000,000 to $2,000,000. It is probable that par value of the stock will be reduced from $100 to $50 a share and the number of shares continued at 40,000. A $50-a-share cash distribution probably will be made.

This action has been expected since Jan. 19, when, at the annual meeting, two of the five directors were elected by the Stockholders' Protective Committee, following a campaign in which the committee urged a distribution of "excessive" cash assets.

Because the opinion of the two new directors, Benjamin Graham and W. A. Schnader, has apparently won the favor of the other directors, J. A. Bartlett, D. S. Bushnell and J. H. Peper, it is expected that the stockholders in turn will approve the capital reduction and cash distribution.

Warner Quinlan Increases Preferred

NEW YORK, March 31.—Warner Quinlan Co. stockholders have approved an increase in amount of preferred stock from 15,000 to 25,000 shares. Preferred stock dividend dates were changed to April 1, July 1, Oct. 1, and Jan. 1.

HOUSTON, March 31.—George H. Jaques was appointed superintendent of the Mid-West Refining Co's producing department at Casper, Wyo. when A. W. Peake was elected vice president of the Dixie Oil Co., Inc.

Texas Has 90% of Calpet

NEW YORK, March 31.—R. C. Holmes, president of The Texas Corp., has announced that 90 per cent of California Petroleum Corp. stock had been exchanged for The Texas Corp. stock under the recent merger plan. Roger Lapham has been elected a director of The Texas Corp.

Financial Notes

Cities Service Co.—Net to common stock and reserves in February was $1,894,811, compared with $1,806,032 in February, 1926.

Midwest Refining Co.—T. A. Pedley, secretary and assistant treasurer, has been elected treasurer to succeed Myron K. Blackmer who resigned. Other officers were re-elected.

Sinclair Consolidated Oil Corp.—Elisha Walker of Blair & Co. has been elected a director to succeed Harry Bronner, also of Blair & Co. Mr. Walker formerly was a Sinclair director but resigned a year ago to become a director of the Tide Water-Associated Oil Co.

Richfield Oil Co.—Denial issued by John McKeon, vice-president, that this company is involved in merger negotiations.

Paragon Refining Co.—Committee is to work out readjustment of capital structure. Deficit of $4,000,000 has accumulated and no dividends have been paid on preferred stock for seven years. Company earned a profit last year. Putting the stock on a $10 a share of no par basis would wipe out the deficit, President E. W. Edwards pointed out at recent annual meeting.

Gasoline More Volatile Last Winter

WASHINGTON, March 31.—A return to the marketing of more volatile gasoline in winter than in summer was noted in the seventeenth semi-annual motor gasoline survey of the Bureau of Mines.

For several years there has been slight volatility variation between winter and summer gasoline, the bureau states, and that confined mainly to the lower end of the distillation range.

The current winter's survey showed an increased volatility ranging from 2 degrees Fahr. at the average initial boiling point to 5 degrees Fahr. at the average end point. The change was most noticeable in samples from New York, Chicago, New Orleans and St. Louis.

Individual analyses showed a general tendency toward marketing of a standardized product as individual variations from the average were small, the bureau reported.

Samples for the survey were collected in Boston, New York, Bartlesville, Pittsburgh, Washington, Chicago, New Orleans, St. Louis, Denver, San Francisco, and Laramie, Wyoming. Detailed report may be obtained from the U. S. Bureau of Mines, Department of Commerce, Washington by asking for Serial 2861.

$50,000,000 Oil Stock Trust Organized

NEW YORK, March 31.—An oil investment trust, styled Oil Shares, Inc., has been organized in New York. At least 50 per cent of the investments are to be in Standard Oil securities and stocks.

The trust will have a capital of $50,000,000 of 6 per cent preferred stock, shares of $50 par value each, and 1,000,000 shares of no par common stock. Units of one share of preferred and one share of common will be offered soon at $70 a unit. P. J. Whiting & Co., New York, has underwritten 100,000 units. Only units will be transferable.

Among those interested in the trust, according to the announcement, are F. deC. Sullivan, trustee to the estate of Morton F. Plant and a director of the Interborough Rapid Transit Co. and the Adams Express Co.; John W. Campbell, chairman of the board, Credit Clearing House of New York; Joel Rathbone, vice chairman, National Surety Co.; L. L. Lewis, lawyer, of Lewis, Garvin & Kelsey; W. A. Schenck, a retired manufacturer; General G. E. McCuaig, McCuaig Brothers & Co., investment bankers, Montreal; Arnold L. Davis, lawyer, of Davis, Wagner & Heater; Judge W. M. Downing, Denver, and Francis R. Henderson, former vice president of the Empire Trust Co.

HOUSTON, March 31.—Frank Drew is manager of the aviation department of the Texas Pacific Coal & Oil Co., Fort Worth, which was formed for development of airplane motor lubrication sales.

Transactions in Oil Shares on New York Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Mar. 31 Sales	First	High	Low	Last	Change
37⅞	27¾	35¾	27⅛	(sh) 922,075	N.P.	Amerada Corp.	50cQ	Jan. 31, 28	54,600	31⅞	*35¾	31½	34¼	+ 2⅛
82½	35⅜	76½	51¼	(sh) 209,180	N.P.	American Republics Corp.	.....	.....	23,800	70	72	66⅝	70	+ 1⅜
50¼	35	41¾	37½	$56,000,000	$ 25	Associated Oil	50cQ	Mar. 31, 28	70	39½	39½	38	38	— 2½
131¾	104	117½	95¾	50,000,000	100	Atlantic Refining	$1Q	Mar. 15, 28	7,400	111	*117½	108½	116	+ 4½
119	115½	118¼	116	20,000,000	100	do pfd	$1.75Q	Feb. 1, 28	200	118	118	118	118	+ 1¾
35½	20¾	26½	22⅛	28,725,675	25	Barndsdall Corp. A	s62½cQ	Feb. 6, 28	47,500	23¼	23⅝	22⅞	22¼	— 1
32½	20½	25¾	22	799,775	25	do B	s62½cQ	Feb. 6, 28	300	22⅞	24	22⅜	22½	— 1⅜
32⅞	20	26⅞	24	51,524,150	25	California Petroleum	25cQ	Mar. 1, 28	5,200	26	26⅝	26	26½	+ ½
96¾	65	93¼	71¼	20,785,400	100	General Asphalt	.....	.....	9,000	86	89¾	84⅝	89	+ 4
144⅞	107¼	140¼	114	6,792,200	100	do pfd	$1.25Q	Mar. 1, 28	3,000	138½	138½	138½	138½	+ 8½
175¾	60⅛	156⅛	127	25,000,000	100	Houston Oil	.....	.....	17,000	148	152¾	145¼	150	+ 3
32¾	17⅝	28¼	21¾	(sh) 500,000	N.P.	Independent Oil & Gas	25cQ	Jan. 30, 28	13,700	26	26⅞	25⅝	26⅝	+ ⅛
12⅛	7⅝	14	9	$3,280,340	$10	Indian Refining	.....	Dec. 15, 20	8,500	13⅞	13⅞	12½	12½	— 1⅛
12	7¼	13⅜	8½	4,550,110	10	do ctfs	.....	.....	8,200	13¼	13¼	11⅞	12	— 1¼
112	99	114	101	2,296,400	10	do pfd	.....	Dec. 15, 21	500	112½	*114	112	112	+ ½
37¾	20½	35⅞	27⅜	(sh) 3,992,122	N.P.	Lago Oil & Transport	75cQ	Feb. 1, 28	5,800	31½	32¾	30½	32¼	+ ⅜
18⅝	10	12¾	9⅜	(sh) 1,136,500	N.P.	Louisiana Oil Refining	.....	.....	19,600	10½	11⅞	10¼	11½	+ 1⅛
97	85¼	91	80	$4,000,000	$100	do pfd	$1⅝Q	Feb. 15, 28	210	85	90½	85	90½	+ 7⅛
22¾	12	18⅛	12½	(sh) 330,000	N.P.	Maracaibo Oil	.....	.....	2,500	14⅞	16⅛	14⅞	15½	— ⅛
58½	31	37½	33	(sh) 2,316,692	N.P.	Marland Oil Co.	.....	Mar. 31, 27	175,000	36	41¼	35⅝	40½	+ 4⅜
320	200	360	255	$45,942,800	$100	Mexican Petroleum	$3Q	Jan. 20, 28	90	300	320	299	309	+12
.....	.....	.....	.....	12,000,000	100	do pfd	$2Q	Jan. 20, 28	.....	.....	.....	.....	.....	.....
9¼	3	8⅝	4⅜	(sh) 945,939	N.P.	Mexican Seaboard	.....	Nov. 15, 24	90,800	7⅞	12½	7⅜	12	+ 4
39⅜	25½	29½	25⅛	(sh) 1,357,461	N.P.	Mid-Continent Petroleum	.....	Aug. 1, 27	21,400	27¾	28⅞	26⅝	28⅝	+ 1⅜
105	97	107	103¼	$6,718,000	$100	do pfd	$1.75Q	Mar. 1, 28	300	106	*107	106	107	+ 3
3¾	1⅜	3⅝	2⅜	24,298,850	10	Middle States	.....	July 1, 23	6,300	2⅝	2⅞	2½	2⅞	+ ⅛
2¾	1⅜	2¾	1½	5,501,370	10	do ctfs	.....	.....	1,900	1⅞	1⅞	1¾	1⅞	0
1⅞	1	1⅝	1¼	(sh) 3,500,000	N.P.	Pacific Oil	.....	.....	6,000	1¼	1⅜	1¼	1⅜	+ ⅛
65⅞	40⅛	46⅜	38¼	$48,807,400	$ 50	Pan American P. & T.	.....	Oct. 20, 27	8,200	42⅞	46	42	45½	+ 2⅝
66⅜	40¼	46¾	37⅜	121,097,900	50	do B	.....	Oct. 20, 27	96,400	45⅝	46¾	42	45⅜	+ 2⅞
37⅞	16¾	21	18¼	(sh) 400,000	N.P.	Pan American Western B.	.....	Jan. 30, 27	5,900	19⅜	21	19	21	+ 1⅛
18⅞	8	16½	11½	(sh) 198,770	N.P.	Panhandle P. & R.	.....	.....	2,700	14¼	15½	14	14⅜	+ ⅞
83	54	81	70	$2,935,200	$100	do pfd	.....	July 2, 23	.....	.....	.....	.....	.....	.....
60¼	36¼	43½	35¼	(sh) 2,406,796	N.P.	Phillips Petroleum	75cQ	Apr. 2, 28	44,600	39⅜	42	38⅝	41⅝	+ 2¼
1⅜	½	¾	½	$29,622,925	$ 25	Pierce Oil Corp.	.....	.....	2,000	⅝	⅝	½	⅝	+ ⅛
24	13½	20½	16¼	15,000,000	100	do pfd	.....	Feb. 1, 22	.....	.....	.....	.....	.....	.....
5½	2½	4⅝	3½	(sh) 2,500,000	N.P.	Pierce Petroleum	.....	.....	9,300	4¼	4¼	3¾	4	0
33⅞	16¾	26	16	$37,450,850	$50	Producers & Refiners	.....	Sept. 15, 23	6,400	21½	22½	21	22½	+ ⅞
50	36⅞	45	41	2,845,350	50	do pfd	.....	May 1, 25	250	43	43¼	43	43½	+ ⅛
33½	25	27½	19	75,959,250	25	Pure Oil Co.	12½cQ	Mar. 1, 28	19,100	21⅞	22⅜	21½	22½	+ ½
115½	111⅜	112	108	13,000,000	100	do 8% pfd	$2Q	Apr. 1, 28	.....	.....	.....	.....	.....	.....
28⅝	25⅜	36⅜	24	$29,224,894	$25	Richfield Oil	25cQ	Feb. 1, 28	95,400	31½	*36⅜	31¼	36	+ 5
54½	44¼	48¾	44⅝	(sh) 611,303	13.40	Royal Dutch, N. Y. shares	$1.343	Jan. 28, 28	5,100	45⅜	46¾	45⅝	46¼	+ ¼
47⅞	41⅜	43⅜	40⅝	(sh) 77,590	£2	Shell Transport & T	97c	Jan. 23, 28	.....	.....	.....	.....	.....	.....
31⅜	24⅝	26⅞	23¼	(sh)10,000,000	N.P.	Shell Union Oil	35cQ	Mar. 31, 28	20,300	25⅝	26½	24⅞	26¼	+ ½
26⅜	14¼	24¾	18½	$7,208,080	$ 10	Simms Petroleum	.....	Apr. 1, 27	102,300	20¼	25¼	19½	24¼	+ 4¼
22⅜	15	27⅜	17⅜	(sh) 4,501,915	N.P.	Sinclair Consolidated	.....	May 31, 24	757,000	25¾	29⅜	24¾	28⅝	+ 2⅞
104½	97	109⅛	102½	$16,604,600	$100	do pfd	$2Q	Feb. 15, 28	2,300	107¾	*109⅛	107½	109⅛	+ 1¾
37⅜	24⅛	28¼	25	27,396,590	25	Skelly Oil Co.	50cQ	Mar. 15, 28	35,700	26⅞	28¾	26⅝	28⅛	+ 1⅝
60¾	50⅜	56⅜	53	(sh)13,016,434	N.P.	S. O. California	62½cQ	Mar. 15, 28	16,000	55⅝	56⅜	55⅞	56⅜	+ ⅞
41⅜	35⅛	40¼	37¾	$607,910,525	$ 25	S. O. New Jersey	‡25cQ	Mar. 15, 28	83,500	40⅛	41⅜	39⅞	41⅛	+ 1⅜
34⅛	29¾	31⅜	28¾	427,973,275	25	S. O. New York	40cQ	Mar. 15, 28	33,400	30¼	30½	29⅜	30⅜	+ 1⅛
34⅞	30	42¾	31½	(sh) 1,206,073	N.P.	Sun Oil	25cQ	Mar. 15, 28	6,800	41	42⅜	40⅝	42⅜	+ 1¾
101⅝	99	102	100	$5,000,000	$100	do pfd	$1.50Q	Mar. 1, 28	.....	.....	.....	.....	.....	.....
6½	3⅛	3⅞	2⅛	(sh) 1,121,368	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	3,900	3	3⅛	2¾	3	0
58	45	55⅜	50	$180,480,550	$ 25	The Texas Corp.	75cQ	Apr. 2, 28	36,500	52⅜	53⅞	52	53¼	+ ⅝
18⅞	12	17	12½	8,380,340	10	Texas Pacific Coal & Oil	15cQ	Jan. 3, 28	8,700	13	13¼	12⅝	13½	+ ⅝
29⅜	19	22¼	19⅝	(sh) 2,168,410	N.P.	Tide Water Oil Co.	20cQ	Mar. 31, 28	1,300	21½	23	21½	22⅞	+ ⅞
90½	85	90¾	87	$20,705,200	$100	do 5½% pfd	$1.25Q	Feb. 15, 28	1,000	88	89	88	89	+ 1
19⅛	15¾	17¼	14¾	(sh) 4,796,158	N.P.	Tide Water Associated	.....	Aug. 1, 27	14,700	15¼	16	15¼	15¾	+ ¼
90¾	85	87¾	82½	$72,745,900	$100	do pfd	$1.50Q	Apr. 2, 28	1,300	83½	84½	83½	84	0
10⅜	3¾	10½	7¼	(sh) 3,742,029	N.P.	Transcontinental Oil	.....	.....	69,100	8⅛	8⅝	7⅞	8¼	+ ½
56½	39⅝	51	42¾	$40,791,225	$ 25	Union Oil of California	50cQ	Feb. 10, 28	29,600	49½	*51	46½	50⅞	+ 1⅝
127½	94	125	119⅛	30,844,000	100	Union Tank Car Co.	$1.25Q	Mar. 1, 28	400	122	122	121½	122½	+ ¼
34½	24½	32⅞	26	(sh) 240,380	N.P.	Warner Quinlan	50cQ	Jan. 3, 28	6,200	28¾	30¾	28¾	30⅛	— 1¾
27½	20	24¼	20⅛	(sh) 490,000	N.P.	White Eagle Oil & Refining	25cQ	Jan. 20, 28	400	21½	21½	21¼	21¼	+ ½

•New High †New Low ‡Also extras s-Stock Total Sales 2,054,620

Pittsburgh Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended March 30 Sales	First	High	Low	Last	Change
9⅞	6⅞	9½	7½	$ 10	Arkansas Nat. Gas.	1,180	7¾	7⅞	7½	7½	— ½
98⅝	80⅞	94	90¾	100	Columbia Gas.	.....	.....	.....	.....	.....	.....
107⅞	100	108	108	100	do pfd.	.....	.....	.....	.....	.....	.....
15	7⅜	10	7	10	Devonian Oil.	45	7	7	†7	7	— 1
....	....	10	9¾	10	Dixie Gas & Util.	550	9¾	10	9¾	10	0
....	....	89	88	100	do pfd.	85	88	*89	88	89	+ ½
117½	115	116	115	100	Duquesne Light pfd.	.....	.....	.....	.....	.....	.....
....	....	85	80½	100	Fayette County Gas.	.....	.....	.....	.....	.....	.....
12¼	6	16	12	N.P.	Houston Gulf Gas.	.....	.....	.....	.....	.....	.....
59¼	37¼	56	52½	$ 25	Lone Star Gas.	11,662	53⅞	*56	53⅞	54⅞	+ 1¾
3⅞	3	4	3¼	5	Pittsburgh Oil & Gas	650	3¼	3¼	3¼	3¼	0
8	5½	7¼	6⅝	10	Salt Creek Cons.	.....	.....	.....	.....	.....	.....
26½	17	20	16¾	10	Tidal Osage.	2,020	17	20	17	20	+ 3
43	33	33¼	33	N.P.	Waverly Oil Wks. A	.....	.....	.....	.....	.....	.....

Pittsburgh Curb Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended March 30 Sales	First	High	Low	Last	Change
....	....	....	....	$ 5	Duquesne Oil.	.....	.....	.....	.....	.....	.....
95	88	....	....	25	Gulf Oil.	.....	.....	.....	.....	.....	.....
....	....	115	115	....	Houston Gulf Gas pfd.	.....	.....	.....	.....	.....	.....
10¾	5½	7⅞	5½	25	Leonard Oil & Dev.	.....	.....	.....	.....	.....	.....
2.70	.30	1.00	.50	10	Omar Oil & Gas.	.....	.....	.....	.....	.....	.....
2¼	1¾	....	....	5	Pittsburgh Oil Dev.	.....	.....	.....	.....	.....	.....
31	19	21¼	17	5	Plymouth Oil.	750	17½	17½	†17	17	— 1
6	5	....	....	5	States Oil.	.....	.....	.....	.....	.....	.....
3⅛	1⅜	3¼	2¼	1	Texon Oil & Land.	1,100	3⅛	3⅛	3⅛	3⅛	0
23¾	18	16	15	10	Tidal Osage Non-vgt.	.....	.....	.....	.....	.....	.....

•New High †New Low xEx Dividend.

Cleveland Stock Market

March 30	Par Value	Bid	Asked	Last Sale
Canfield Oil Co.	100	.....	.....	.....
do pfd	100	x98¼	...	100
Fred G. Clark	10	2⅞	3	2⅝
National Refining Co.	25	35½	36¼	36½
do pfd	100	x130	135	130
Paragon Refining Co.	25	9¾	10	10
do pfd	100	....	115	115

x Ex-Dividend

Oil Dividends

	Amount	Payable	Stock of Record
Buckeye Pipe Line q.	$1	June 15	Apr. 23
do extra	$1	June 15	Apr. 23
Eureka Pipe Line q.	$1	May 1	Apr. 16
Independent Oil & Gas q.	25c	May 7	Apr. 23
Indiana Pipe Line q.	$1	May 15	Apr. 20
Mexican Petroleum q.	$3	Apr. 20	Mar. 31
do pfd q.	$2	Apr. 20	Mar. 31
New Bradford Oil q.	12½c	Apr. 15	Mar. 31

Oil Company Earnings

	1927	1926
Panhandle Prod. & Ref.	•$ 19,090	$ 325,154
General Asphalt	1,329,173	2,001,991
Salt Creek Producers	†3,321,385	†5,181,430

•Loss. †Before reserves and federal taxes.

Standard Oil Stocks on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Mar. 31 Sales	First	High	Low	Last	Change
21⅝	17⅜	22⅜	18¼	£ 4,126,460	£ 1	Anglo-American Oil	60⅓c	May 31, 27	2,300	20⅝	20¾	20⅛	20⅛	— ⅝
21½	17⅝	20½	18½	.....	£ 1	do cts. non-voting	.....	.....	300	19½	19½	19½	19½	+ 1¼
3¾	¾	2⅜	1¼	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	800	1⅝	*2⅜	1⅝	1¾	+ ½
6½	2½	4⅞	3¼	$ 10,000,000	$ 50	do pfd	.....	.....	1,100	3¾	*4⅞	3⅝	4⅞	+ 1¼
69	50	56	50	1,000,000	25	Borne Scrymser	‡$1S.A.	Oct. 15, 27	100	50	50	50	50	— ½
60	45	71	58	10,000,000	50	Buckeye Pipe Line	$1Q	Mar. 15, 28	3,400	65⅞	*71	65⅞	71	+ 5⅛
126	76½	149¾	117¼	3,000,000	25	Chesebrough Mfg	$1Q	Mar. 30, 28	100	131¼	131¼	131¼	131¼	— 5⅜
22⅝	16¼	22½	16	36,057,840	10	Continental Oil	.....	Dec. 15, 27	23,500	17⅛	18¼	17	18¼	+ 1⅜
137	89	105	88	3,000,000	100	Cumberland Pipe Line	$2Q	Mar. 15, 28	400	97	99	96½	99	— 1
68½	47	72¾	64⅛	5,000,000	100	Eureka Pipe Line	$1Q	Feb. 1, 28	150	71½	71½	71½	71½	+ 1¼
13½	3½	8	5	16,000,000	100	Galena Signal Oil	.....	June 30, 25	.....	.....	.....	.....	.....	.....
59¾	23	39	27	4,000,000	100	do new pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
60⅛	35½	48	35	2,000,000	100	do old pfd	.....	June 30, 26	10	42	42	42	42	— 2
68½	54	68	60	73,117,577	25	Humble Oil & Refining	‡30cQ	Apr. 1, 28	15,600	63⅜	65½	63	65⅜	+ 1⅝
182	123¾	206	176½	20,000,000	100	Illinois Pipe Line	$6S.A.	Dec. 15, 27	375	203¼	204	200	200	— 3¼
64¾	37¾	65¼	56¾	(sh) 6,458,267	N.P.	Imperial of Canada	‡25cQ	Mar. 1, 28	12,000	59¾	64	60¼	61¾	+ 1⅞
94½	61	84⅝	74⅞	$5,000,000	$ 50	Indiana Pipe Line	†$1Q	Feb. 15, 28	300	82	83	82	83	+ ½
39	28¼	43	35	(sh) 17,123,444	N.P.	International Petroleum	25c	Mar. 15, 28	51,900	37⅛	39⅞	37⅛	39⅜	+ 1⅜
24	13¼	31⅜	20½	$6,363,350	12.50	National Transit Co	25cQ	Mar. 15, 28	16,000	27¾	*31⅜	27½	31	+ 2⅛
44½	31¼	56	37½	5,000,000	100	New York Transit	.....	July 15, 26	500	54	55½	54	54½	— 1½
100	70	125	94	4,000,000	100	Northern Pipe Line	‡$3S.A.	Jan. 1, 28	1,400	111	125	111	121¾	—10¾
67⅞	52	66¾	58	60,000,000	25	Ohio Oil Co	‡50cQ	Mar. 15, 28	1,900	59¾	61½	59½	60½	— ⅝
39	12	45	29	10,000,000	25	Penn Mex. Fuel	.....	May 21, 25	6,100	42	*45	40⅞	45	+ 3
55⅛	45⅜	50½	47⅝	60,000,000	25	Prairie Oil & Gas	.....	Aug. 31, 27	2,100	219	220½	215	218	— 1¾
190	132	223	184	81,000,000	100	Prairie Pipe Line	$2.50Q	Feb. 1, 28	8,800	483¾	491¾	483¼	491⅝	+ ⅜
201½	175½	178	167	4,000,000	100	Solar Refining	$5S.A.	Dec. 20, 27	60	168	168	†167	167	— 1
27¼	15½	33½	21	5,000,000	50	Southern Pipe Line	$2	Dec. 1, 27	4,000	30	32¾	30	32½	+ 2
41½	35	42	36¾	20,000,000	25	South Penn Oil	50cQ	Mar. 31, 28	5,000	38¾	*42	38⅜	41½	+ 3⅛
83	55½	96	70	3,500,000	100	South West Pa. Pipe Lines	‡$1Q	Apr. 2, 28	400	92	92	91	91	— 1
81½	64⅝	80½	70⅞	228,415,463	25	S. O. Indiana	‡62½cQ	Mar. 15, 28	37,200	74¾	78	73⅝	78	+ 3⅜
20⅞	14⅝	18½	15	8,000,000	25	S. O. Kansas	.....	June 16, 24	13,500	18⅜	23½	17⅜	22⅜	+ 4
130	111½	132¾	122¼	17,012,559	25	S. O. Kentucky	$1Q	Mar. 31, 28	7,200	126	128	125½	128	+ 2
49¼	40	43	39⅞	4,559,850	25	S. O. Nebraska	63cQ	Mar. 20, 28	100	42¼	42¼	42¼	42¼	+ ¼
87½	72	79	71	14,000,000	25	S. O. Ohio	62½cQ	Apr 2, 28	250	71½	74	71½	74	+ 2½
122	117¼	120½	117	7,000,000	100	do pfd	$1.75Q	Mar. 1, 28	.....	.....	.....	.....	.....	.....
21	14½	26	16	30,734,000	25	Swan Finch Co	.....	Nov. 1, 19	50	16	16	16	16	0
149⅞	95⅛	149	136¾	62,470,800	25	Vacuum Oil	‡50cQ	Mar. 20, 28	7,600	141¾	143½	141⅛	143½	+ 1¾

*New high †New low xEx dividend ‡Also extras.

New York Bonds

Week Ending March 30

	High	Low	Last	Ch'ge
Assoc. Oil gold 6s	103¼	103	103	0
Atlantic Refg. deb. 5s	102¼	102	102	— ⅜
Barnsdall Corp. 6s	101⅛	100	100¾	+ ⅜
Barnsdall Corp. 8s ex-war.	91½	91	91	— ½
Cal. Pet. 5s	100½	100⅛	100⅜	0
Cal. Pet. 5½s	102¾	102⅛	102⅛	— ⅛
General Asphalt 6s	111	110	110½	— ½
General Petroleum 5s	102½	101⅞	101⅞	— ⅛
Humble Oil & Refg. 5½s	103	102⅝	103	+ ⅛
Humble Oil 5s	101	100½	101	0
Mid-Cont Pet. 6½s	105½	105¼	105½	0
Pan Amer. P & T 7s	105	105	105	0
Pan Amer P & T 6s	103½	103	103¼	+ ¼
Pan Amer. P & T 6s	94½	93⅜	94½	+1⅛
Prod. & Refg. 8s	110¼	110⅛	110¼	— ⅛
Simms Pet. 6s	107½	103	106⅝	+2⅞
Sinclair Con. Oil 7s	103¼	101⅞	103¼	+1⅛
Sinclair Con. Oil 6½s	101½	99⅜	101⅜	+1⅜
Sinclair Con. Oil 6s D	99¼	98	99¼	+ ⅝
Sinclair Crude Oil 5½s	99¼	98	99¼	+1¼
Sinclair Pipeline 5s	97	95¼	97	+2
Skelly Oil 5½s	95	94¾	95	0
S. O. N. Y. 4½s	98¼	97¾	98	+ ⅛
S. O. N. J. deb. 5s	103⅝	103⅜	103⅜	+ ⅛
Superior Oil 7s	103½	103½	103½	— ½
Union Oil of Calif. 6s A	110½	110⅛	110⅛	— ⅛
Union Oil of Calif. 1s 5s	100¼	100	100	—2
Union Oil of Calif 5s C	100¼	100⅛	100⅛	+ ⅛
White Eagle 5½s	95⅞	95¼	95¾	— ⅛

New York Curb Bonds

Week Ending March 30

	High	Low	Last	Ch'ge
Beacon Oil 6s '36	100½	100	100	0
Cities Serv. 5s '66	96	95½	95⅝	— ⅜
Cities Serv. 6s '66	103⅛	103	103	0
Cities Serv. G 5½s '42	97¾	96⅞	97¼	+ ⅛
Cont. Oil 5½s '37	97⅞	97⅛	97½	— ⅜
Empire O & R 5½s '42	95¾	95¼	95⅜	+ ⅛
Galena Oil 7s '30	92⅛	92	92¼	0
Gulf Oil 5s '37	102¼	101½	101½	— ½
Gulf Oil 5s '47	102	101¾	101¾	0
Independent Oil 6s '39	99	98½	98½	— ⅜
Pennok Oil 6s '50	104¼	104	104¼	0
Phillips Pet. 5½s '39	95	94½	95	+ ¼
Richfield Oil 6s '41	106	100½	104½	+3½
S. O. N. Y. 6½s '33	103¼	103½	103⅜	0
Sun Oil 5½s '39	102¼	101¾	102¼	+ ⅜
Trans. Con't. Oil 7s '30	106¾	104	105½	+ ⅜
Warner Quinlan 6s '42	101	99½	101	+ ¾

Independent Oils on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Mar. 31 Sales	First	High	Low	Last	Change
2⅛	.55	1½	.80	$ 5	Amer. Con. Oilfields	10,500	.81	.87	.80	.84	— .2
7½	2¾	4⅛	3⅛	N.P.	Amer. Maracaibo	5,600	3⅞	4¼	3⅞	4	+ ⅛
2⅜	1	4	2¼	$ 10	Argo Oil	500	2½	2⅜	2½	2⅜	+ ⅜
9⅜	6¾	9⅞	7¾	10	Arkansas Nat. Gas	200	7⅛	7½	7⅛	7½	+ ½
20½	15½	....	....	N.P.	Beacon Oil	....	....	....	....	....	....
40	20½	39¾	32¾	N.P.	British American	200	38	38	37½	37½	— 1
28¼	15½	23⅞	18½	25c	Carib Syndicate(new)	3,200	20½	21¼	20	20⅞	— ⅜
26	15⅜	....	....	....	do ctfs. of deposit	....	....	....	....	....	....
58¾	40¾	59⅜	54	$ 20	Cities Service	50,000	59	*59⅜	57	57⅜	— 1⅞
95⅝	87	100	94½	100	do pfd	2,400	98¾	99½	98⅝	99½	+ ⅜
8⅞	7⅝	9½	8⅞	10	do pfd. B	600	9⅜	9⅜	9¼	9¼	— ⅛
29¼	22½	28¼	28¼	10	do banker's shares	....	....	....	....	....	....
3⅞	1⅛	1¼	1⅛	1	Colombia Syndicate	15,100	1⅜	1⅝	1¼	1⅜	+ ⅛
9¾	6⅜	7⅜	6¾	10	Consolidated Royal	200	7⅛	*7⅜	7⅛	7⅜	+ ⅛
14⅞	9½	14⅜	10	N.P.	Creole Syndicate	41,000	13⅝	13¾	13	13¾	+ ⅛
3	.50	1½	.76	N.P.	Crown Central	400	80	98	80	95	+ 5
12	4	13⅞	8⅛	N.P.	Darby Petroleum	1,600	11½	12¾	11½	12	+ ⅜
11½	4	13½	7⅞	....	do trust ctfs.	....	....	....	....	....	....
2½	.74	1⅞	1	N.P.	Derby Oil & Refining	100	1	1	1	1	0
16¾	4	....	....	N.P.	do pfd	....	....	....	....	....	....
3¾	1	2	1¼	N.P.	Gibson Oil	8,200	1⅜	1½	1¼	1½	+ ⅛
2	.40	.53	.51	N.P.	Gilliland ctfs.	....	....	....	....	....	....
118	86¼	117¼	101⅛	$ 25	Gulf Oil Corp.	18,700	109	116	108¾	115½	+ 5
2½	.80	2¾	1½	10	Intercontinent Pet.	500	2	2⅛	2	2⅛	— ⅛
2¼	1⅛	1⅞	1¼	N.P.	Kirby Petroleum	500	1¼	1¼	1¼	1¼	0
10⅞	5⅛	7⅞	5⅛	N.P.	Leonard Oil & Dev.	6,900	7½	7½	6½	7⅛	0
27½	20	24⅜	20	N.P.	Lion Oil & Refg.	1,300	21	22⅞	21	22⅞	— ⅛
59⅜	37	56	52	$ 25	Lone Star Gas	4,400	53⅞	*56	53⅞	55¼	+ 1½
2⅞	.80	1⅝	.91	1	Magdalena Synd.	21,800	1⅜	1⅜	1	1	— ⅛
21½	20⅞	22⅛	22⅛	N.P.	Manhattan Oil	....	....	....	....	....	....
52	12	45	40	N.P.	Margay Oil	....	....	....	....	....	....
3	1½	....	....	$ 10	Mexican-Panuco	....	....	....	....	....	....
12½	5	.8	4½	N.P.	Mexico-Ohio Oil	1,500	6	*8	6	6½	+ 2
1½	1	1½	1¼	$ 1	Mountain & Gulf	25,900	1⅞	1½	1⅞	1½	+ ⅛
29¼	22¾	28⅝	25⅛	10	Mountain Producers	4,900	26¼	26¾	26	26	— ¼
5⅞	4⅝	5⅝	4¾	5	New Bradford	2,200	5½	5½	5	5	— ⅛
6¼	4	4⅝	4	10	New England Fuel	....	....	....	....	....	....
16	9¼	9⅞	8⅛	1	New Mex. & Ariz.	900	8⅛	8¼	8⅛	8¼	+ ⅛
13⅞	9	14½	11½	25	New York Oil	....	....	....	....	....	....
12¾	9½	12⅝	10¾	N.P.	North Cent. Texas	500	12	12	12	12	0
23⅞	21¼	....	....	....	Okla. Nat. Gas ctfs.	....	....	....	....	....	....
9⅜	3¼	6	2⅝	N.P.	Pandem	7,000	3⅛	3⅞	2⅞	3¼	— ⅛
12⅛	7	10⅞	8½	N.P.	Panapec Oil	3,300	8⅞	9	8¾	8⅞	0
9	7⅝	11⅜	10⅝	$ 25	Paragon Refg.	....	....	....	....	....	....
.37	.25	9	4	N.P.	Peer Oil Corp.	....	....	....	....	....	....
13½	5⅜	6⅜	5⅛	$ 10	Pennok Oil	1,300	5⅞	5⅞	5⅜	5¾	0
....	....	4⅜	3⅜	5	Pittsburgh Oil & Gas	....	....	....	....	....	....
24¾	7	14	9	25	Red Bank Oil	100	12	12	12	12	0
15½	3½	6⅜	4⅛	N.P.	Reiter-Foster	10,600	5¼	6⅝	5¼	6⅝	+ ⅞
28⅛	15	30⅜	23¼	$ 25	Richfield Oil pfd	6,700	26⅞	*30⅜	26⅝	29⅜	+ 2⅞
7	4⅛	5⅝	4⅞	N.P.	Ryan Consolidated	....	....	....	....	....	....
8	5¼	7¼	6⅝	$ 10	Salt Creek Cons.	1,400	7	7	6⅞	6⅞	— ⅛
35½	27¼	35	28½	10	Salt Creek Prod.	1,590	31⅜	31¾	31	31⅜	— ⅛
7	1¾	2	1	5	Savoy Oil	....	....	....	....	....	....
26½	17	20½	13	10	Tidal Osage	17,800	16⅞	*20½	16⅞	19½	+ 2½
23¾	15	18½	13⅛	10	do non-voting	4,400	16	*18½	16	17⅞	+ 1⅞
92	63¼	86	82½	100	Transcontinental pfd.	300	86	86	85	85	+ ½
23¼	7	33¾	18	10	Venezuela-Mexico	600	30¾	*33¾	30½	33¾	+ 2¾
7⅜	4¼	6¼	4⅞	5	Venezuelan Petrol.	4,400	5⅝	5¾	5½	5⅝	+ ⅛
32⅝	19½	22⅞	18⅞	N.P.	Wilcox Oil & Gas	800	19⅞	19⅞	†18⅞	19½	+ ¼
8	4¾	7	5¾	$ 1	Woodley Petroleum	....	....	....	....	....	....
6	1¾	3⅞	2⅛	25	Y Oil & Gas (new)	1,800	3½	3½	3	3½	+ ⅜

*New High †New Low xEx Dividend

OIL INDUSTRY EXCHANGE

Positions Wanted

EXPERIENCED REFINERY CREDIT MANAGER and general office man desires connection with growing refinery. Reference. Address Box 60.

Situations Open

SALESMAN WANTED

for oils, paints, greases, roof cement. Easy-selling quality line. Meets any competition. Protected territory. Square-deal contract. Real co-operation. Prompt settlements. Old established firm. Good for $60 to $85 weekly. Become District Supervisor later. Write in confidence. Give age, experience.

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EQUIPMENT FOR SALE: Stills, boilers, air pumps, tanks, pipe fittings, etc. Box 61.

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To buy MODERN SERVICE STATION, located on two transcontinental highways in good little Nebraska town.

Also adjacent thereto a six room MODERN HOUSE and three vacant lots. Premises consist of SIX full LOTS. IDEAL place for a TOURIST CABIN CAMP proposition in connection with station. Bulk plant site available. Business Good.

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Gasoline is Up 1/4 Cent In Pennsylvania

CLEVELAND, April 2.—Price of U. S. Motor gasoline at almost all western Pennsylvania refineries was 0.25 cent a gallon more today than last week. Only one source for 8.25-cent gasoline for Pennsylvania and New York state destinations was found. The prevailing price was 8.50 cents with a sprinkling of 8.75-cent prices.

For Ohio destinations some refiners were meeting competition which meant a net back to the Pennsylvania refiner of approximately 8.25 cents a gallon for U. S. Motor. In the Pittsburgh district, where a large consuming market is reached at low freight rates, or even only switching charges, price exceeded even 9 cents a gallon at the refinery.

Kerosene demand is steady but not active, most refiners report. Prices continue to cover a wide range. Demand for fuel oil was reported to be less than demand a week to 10 days ago.

More buying of filtered cylinder stocks was done in March than in any month in a year, two of the largest producers of these stocks reported. Prices are slightly higher.

Season for bright stocks is opening and rumors of price concessions seem to have disappeared. Several bright stock makers have advanced their prices.

Steam refined stocks are unchanged. Refiners hope for a resumption of export buying to stimulate prices although supplies are said to be moderate with some grades scarce. Steam refined stocks are steady with price ranging widely because of variances in specifications other than flash and fire.

The supply of spot white crude scale is said to be small. Quotations range 0.25 cent a pound, refiners' ideas differing with the length of time ahead for which they are sold up.

Wax Market Experiences A Buying Flurry

NEW YORK, March 31.—A flurry in buying experienced around the middle of this week broke the monotony which has prevailed in wax markets for nearly a month. The heavy demand was not in the nature of new buying but came largely from brokers seeking to cover on March orders which their original sources of supply were unable to fill.

As high as 3.50 cents a pound was paid this week for white crude scale in New York for delivery before the end of March. After March commitments were covered, however, demand fell off as quickly as it had picked up and goods over April and May were being freely offered at 3.25 cents toward the end of the week. A car of 122-124 white crude scale sold March 30 at 3.25 cents for shipment during the first half of April.

The market for fully refined waxes at New York was reported to be very tight although no material change in prices was noted, with the possible exception of the high melting points. These grades were offered approximately 0.375-cent a pound lower by one or two sellers who are in the market only occasionally. Fully refined, 125-127 a.m.p., was virtually unobtainable according to buyers seeking large quantities.

Demand for wax was a shade steadier in the New Orleans market and sales of several small lots of white crude scale were reported at 3.125 cents and semi-refined at 3.25 cents. Fully refineds moved up slightly.

Lube Oils Are Stronger In Export Market

NEW YORK, March 31.—A generally better tone was noted in the demand for lubricating oils for export this week. The relatively low prices quoted by several exporters for some Pennsylvania oils were advanced a 0.25 to 0.75 cent. Pennsylvania 600 steam refined was quoted at a minimum of 16.75 cents against 16 cents a week ago. Suppliers generally quoted 33 cents for dark bright stock, whereas this oil was available a week ago at 32.50 cents.

Less viscous oils were reported extremely scarce in south Texas. One refiner reported being sold up for some time to come and at least two refiners were in the market buying heavy oils. The low prices quoted for 200 and 300 No. 3 color unfiltered pale oils were a 0.25-cent higher this week at 7.75 cents and 9.25 cents, respectively.

TULSA, April 2.—W. W. Robinson, Jr., of the California Gasoline Co., will present a paper on "The Importance of Gas and Gasoline Analysis" at the seventh annual convention of the Association of Natural Gasoline Manufacturers in Tulsa May 22 and 23. The remainder of the program was given in the March 28 issue of NATIONAL PETROLEUM NEWS.

LOS ANGELES, March 30.—Stanley W. Dunhig, for many years connected with the Shell Co. in California in various capacities, has recently been appointed to manage the auditing department at the Shell executive offices in San Francisco.

LOS ANGELES, March 30.—Bob Thurman, who recently resigned from the sales department of the Redondo Oil Tool Co., has accepted the position of sales manager of the Pacific Oil Tool Co., with headquarters at Los Angeles.

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